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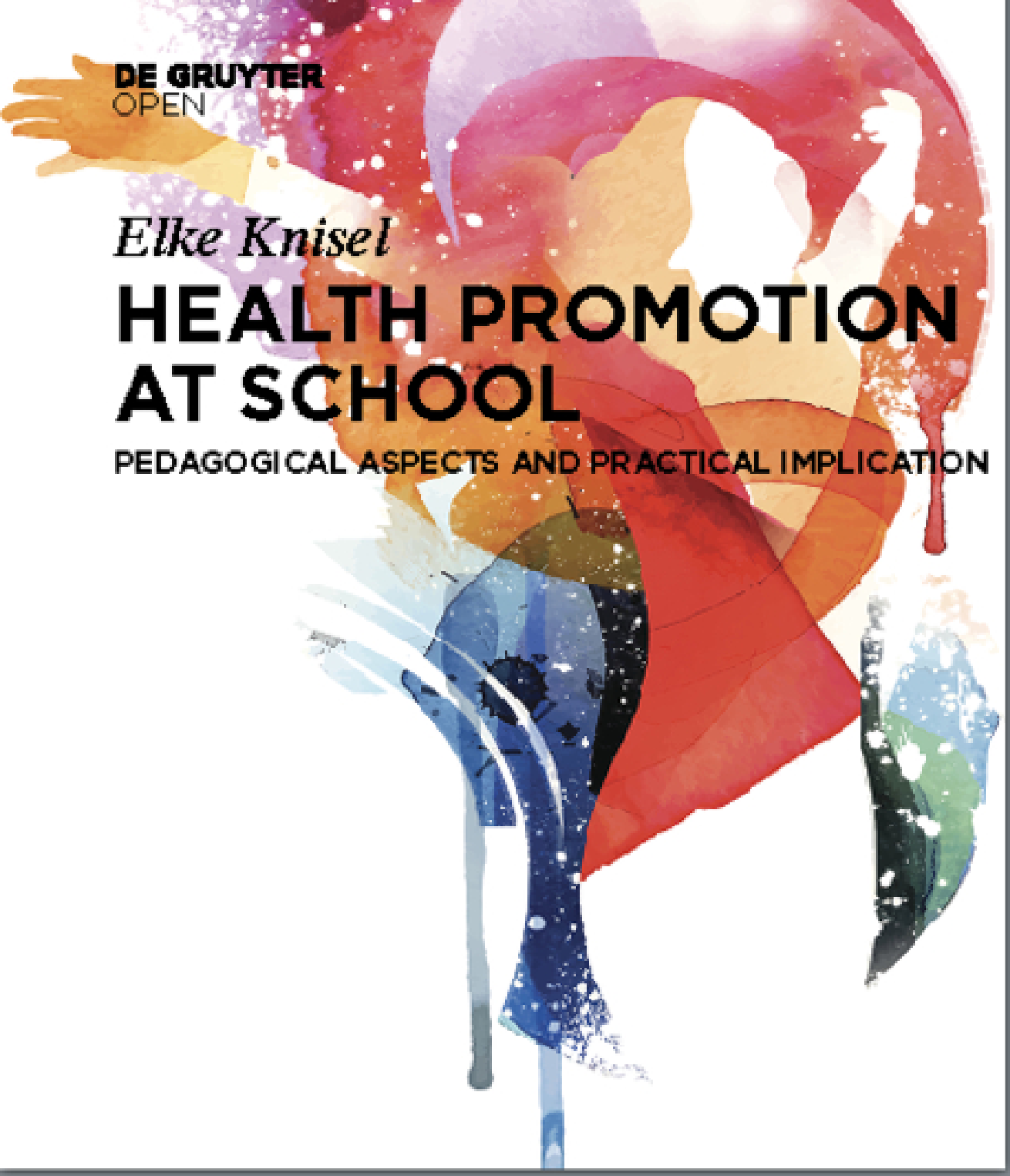
Elke Knisel

HEALTH PROMOTION AT SCHOOL

PEDAGOGICAL ASPECTS AND PRACTICAL IMPLICATION



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Foreword: The Health(a)ware Project

Health(a)ware was a multilateral project funded within the sub programme *Comenius* in the Life Long Learning Programme (LLLP). The aim of the EU with this programme is to support learning opportunities from childhood to old age in every single life situation according to the ideas of Johann Amos Comenius (1592-1670) of a school education based on practise and focussed on individual responsibility.

The universities involved in the Health(a)ware project were the Humboldt University of Berlin (DE), the Technical University of Madrid (ES), the Norwegian School of Sport Sciences (NO), the University School of Physical Education Poznan (PL), the Charles University Prague (CZ) and the University of Vienna (AT).

Health(a)ware consisted of three project phases. In the first phase the effective collaboration among the partners enabled the team to work out an inter-cultural approach to the current health concepts and discussed in the Health(a)ware conference in Prague in June 2007. In the second phase teaching examples were developed by the teamwork of physical education (PE) students and qualified PE teachers from the participating project schools. The examples were presented at the workshop in Poznan in June and during the conference in Vienna in September 2008. The third phase of the project included the testing and evaluation of the teaching examples. The symposium in Madrid in April 2009 gave an overview of the health modules and the material kit for PE class, cross-subject teaching and health projects at school.

This handbook is the result of this 3-year project work. The target groups of the book are teachers, students and professionals of health promotion and education, pedagogy and didactics, psychology, health sciences and other health-related subjects in different institutions (e.g., schools, universities, and health organizations), societies and non-profit organisations involved in health promotion, health experts and participants of vocational and in-service training.

We thank all involved colleagues, schools and teachers and health experts for their work in the life of the project.

The Editors

Elke Knisel

1 Health(a)wareness

The health of children and adolescents has, for decades, been a topic of interest in most parts of Europe. The World Health Organization (WHO) and UNESCO have supported various campaigns and health programmes. The European Union (EU) and the European Commission (EC) funded several projects dealing with the promotion of health and physical activity in these age groups. Many of these projects have been focussed on the school setting and especially on the subject of Physical Education (PE). One approach is to enhance students' health awareness through modified PE class and other physical or sports activities at school. A recent example of such an innovative approach is the project Health(a)ware: An experienced-based learning and teaching approach for physical and health education (project number: 128737-CP-1-2006-1-DE-COMENIUS-C21) funded by the EC in the Socrates program, Comenius 2.1 action – Training of School Education Staff – with a focus on secondary schools. As a part of the Lifelong Learning Programme of the EU, the aim of Comenius is to support young people in the acquirement of life skills and competencies important for their individual development as a European citizen.

Among the current priority areas of the Comenius programme you can find the topic "Participation in sports". It seems to be of special interest for the EU to help young people to acquire skills and competencies related to a healthy and active lifestyle in order to respond to the increasing health-related problems of children and adolescents across Europe.

In accordance with the ideas of the Comenius programme, the project Health(a) ware was established in 2006. The concept of teaching health topics at school in order to improve knowledge transfer, individual abilities, competencies and skills, as well as behaviour and habits, requires a pedagogical and didactical framework, and an exceptional health methodology which was developed during the life of the project. The methodology leads to a teaching structure with experimental learning settings including PE class, as well as cross-subject teaching approaches and project work.

The Health(a)ware project was initiated and coordinated by the group of Prof. Dr. Elke Knisel, Prof. Dr. Hanno Strang and Dr. Antje Stache at the Humboldt University of Berlin in Germany. Their research focus lies on the pedagogical and psychological aspects of health. The topics of the cooperating teams at the different universities cover natural sciences and health (Prof. Dr. Marcela Gonzalez-Gross; Polytechnic University of Madrid), health education and intercultural learning (Prof. Dr. Ralf Erdmann; Norwegian School of Sport Science in Oslo), historical and philosophical aspects of health (Assoc. Prof. Dr. Irena Parry Martínková; Charles University in Prague), and health didactics and methodology (Prof. Dr. Michal Bronikowski; University School of Sport and Physical Education in Poznan; Prof. Dr. Konrad Kleiner; University of Vienna).

The idea of the project Health(a)ware was to develop a close partnership between the universities which results in an interdisciplinary approach based on different perspectives of health. Additionally, a close cooperation between local schools and the involved universities was established which leads to health-promoting school networks which work together on a European level. In this framework the European school network HEPE (Health and Physical Education) was built in order to develop an empirical-based and movement-oriented health education approach for secondary schools. Partners of this multilateral school project funded by the EU (project number: CML-BE-07-00514) were the Wilhelm-Maybach School at Berlin (DE) in the coordinate function, the Linderudskole in Oslo (N0), the school I.E.S. El Alamo near Madrid (ES) and the Bundesgymnasium in Vienna (AT).

The outcome of the project Health(a)ware is this handbook. The book consists of two parts. In the first part a pedagogical and didactical framework for school-related health education and health promotion is outlined. In the second part an innovative teaching approach together with teaching examples are presented to show how the idea of health education and health promotion can be implemented. The aim of the book is to link a theoretical framework and practical implications regarding intercultural aspects in teaching health at school.

The target groups of the book are teachers, students and professionals of health promotion and education, pedagogy and didactics, psychology, health sciences and other health-related subjects in different institutions (e.g., schools, universities, and health organizations), societies and non-profit organisations involved in health promotion, health experts and participants of vocational and in-service training. We enable them to extend their health knowledge and their didactical and methodological competencies in addressing young people at the age of 12-16 years with the topic health. Our book provides many teaching examples together with different kinds of physical activity. However, to improve students´ health-related behaviour the topic health and physical activity is not limited to the subject PE but includes other subjects in the natural sciences (Biology, Chemistry or Physics) and the social sciences (Languages, Drama, History or Psychology). In our book we show teaching examples with PE in connection with these subjects as proposals for cross-subject teaching. Additionally, we describe teaching examples for school-related project work with the topic health and physical activity which go in line with the interdisciplinary approach of the project Health(a)ware. According to this approach and the pedagogical background the teaching examples include various perspectives of health and physical activity conceptualised in four modules: *Body & Measurement, Body &Time, Body & Bodies* and *Body & Environment*.

2 Pedagogical and Didactical Frameworks

Society is constantly immersed in a dynamic process that makes it necessary to continuously adapt. This also applies to school subjects which must evolve according to society's demands. The aim of the project Health(a)ware was to enhance students' health awareness through experimental learning settings which includes PE class as well as cross-subject teaching approaches and project work. The improvement of health knowledge, individual abilities, competencies and skills, and health behaviour and habits requires a pedagogical and didactical framework based on current concepts and interdisciplinary research and discussed in the following articles.

Elke Knisel

2.1 Health Literacy and Physical Education

2.1.1 Introduction

There is consensus that schools are the most appropriate setting for improving health-related aspects at young ages (van Cauwenberghe, Maes, Spittaels, van Lenthe, Brug, Oppert & de Bourdeaudhuij, 2010). Childhood and adolescence constitute key stages for learning and adopting a health-related and active lifestyle which includes physical activity and sports. Several empirical studies have confirmed that physical activities are vital for improving health in children and adolescents (e.g., Janssen & LeBlanc, 2010; Luepker, Perry & McKinlay, 1996). Hence, it is important to look at the subject Physical Education (PE) and what it can do to equip students with health knowledge and competencies to enable them to take responsibility for their own health and to be observant of others (St Leger, 2001). The question of the acquirement of health knowledge and competencies is essential in the concept of health literacy and is discussed in the following section.

2.1.2 The Concept of Health Literacy and School-related Health Promotion

The term "Health Literacy" was first used by Simonds (1974) and now is commonly defined as the degree to which people have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions (Ratzan, 2001). The World Health Organization (WHO) has described health literacy as the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways that promote and maintain good health. With the concept of health literacy a differentiation between health education and health promotion and their different outcomes was proposed (Kickbusch, 1997; Nutbeam, 1998).

Nutbeam (2000) illustrated three levels of health literacy: functional literacy (level 1), interactive literacy (level 2) and critical literacy (level 3). Functional literacy refers to the transmission of basic information about health topics, e.g., physical activity, nutrition or drugs. The notion is to increase knowledge of these topics in order to enhance good health. Interactive literacy implies the development of personal and social skills to take care of one´s own health through health-related behaviour as physical activity. Critical health literacy indicates advanced cognitive skills which are connected with personal empowerment and social skills to critically analyse health information, to define self-determined health goals and taking action in various situations accordingly.

Health literacy is an important outcome of the discussion of school-related health education and health promotion in the 21st century. According to St Leger (2001) school-based health programmes are characterized by functional literacy (level 1) and interactive literacy (level 2). Level 1 and level 2 are fundamental to educate and promote health. Furthermore, critical literacy (level 3) is not well developed in many schools and countries. Nutbeam (2000) pointed out that the achievement of the third level refers to self-determination and autonomy which are nowadays important goals for Physical Education (PE) and lead to a new didactical approach developed in the project Health(a)ware and presented in this book. In the following pages we examine the development of health topics in PE class in regard to the achievement of Nutbeam´s three levels of health literacy.

Health education and disease prevention has been an important topic in the context of school education since the 1970s. Early initiatives were characterized by the transmission of information to students about health risk factors in the form of determents. Especially in Biology students were given information, e.g., of smoker´s legs or of lung cancer, to influence their (preventive) behaviour. The belief was that giving the students such information would develop attitudes towards individual health behaviour (St. Leger, 2001). The school initiatives in many countries at that time were based on the pathogenesis approach describing the development of disease caused by multiple risk factors and processes. However, these campaigns resulted only in "few sustainable behaviour changes" (St Leger, 2001, p. 199) because they did not take into account students´ personal skills or social environment (Nutbeam, 2000). These factors formed the background of several concepts in the 1980s which attempted to explain and predict change of health behaviour, e.g., the "Theory of Planned Behaviour" (Azjen, 1985), the "Health Belief Model" by Rosenstock, Stretcher and Becker (1988) or Bandura´s "Social Cognitive Theory" (1989) and fits to the idea of interactive literacy.

In conjunction with the focus on personal and social skills was a shift in the understanding of health and disease. Antonowsky (1979) describes in his salutogenesis model health determined by a dynamic process of risk and protective factors. Health is seen as a deficient, active and itself dynamically regulating occurrence. This idea of focusing on factors that support human health and well-being was in contrast to the pathogenesis model based on the doctrine of genesis and therapy of diseases and has been predominant for many years.

In connection with the Ottawa Charter for Health Promotion (WHO, 1986; 1987) and the Jakarta Declaration (WHO, 1997) (see Table 1), and the research about the individual and social health determinants, education authorities revised their notions of school health education (St Leger, 2001).

Table 1: Who´s Ottawa Charter and Jakarta Declaration

In the Ottawa Charter (1986; 1987) health promotion is the process of enabling people to increase control over, and to improve their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realise aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasising social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being.
The Jakarta Declaration (1997) underlines and supports the quintessence of the Ottawa Charter and sets priorities in health promotion for the 21st century. These priorities involve encouragement of social accountability for health, enhanced support for individual decision-making, and an infrastructural assurance for health promotion.

A new approach, called the health-promoting school concept, was designed and implemented in many European countries at the beginning of the 1990s. Corresponding to the salutogenesis model, the notion was to increase students´ health knowledge and skills by shifting health in a more dynamic domain by considering the connection between health knowledge, attitudes to one´s own health, beliefs, and social factors (St Leger, 2001). This new approach concentrates more on educational outcomes for the students and increases empowerment and the achievement of critical literacy. In the health promoting school concept, risk communication is now complemented by resource management strategies to mobilize students´ health resources and to lead to positive health behaviour choices. In this context the total school environment with its links to external partners (e.g., sports clubs) and the local community, is becoming increasingly important especially when new forms of teaching are considered, such as cross-subject teaching or project teaching. A number of published studies suggest that the health promoting school concept is a promising approach to address school-related health promotion (Lister-Sharp, Chapman, Steward-Brown & Sowden, 1999).

2.1.3 Health Literacy in Physical Education Class

Kolbe (2002) proposed a framework with four major goals for health-related school programmes. The first type of goals refers to the improvement of health knowledge, attitudes about health, and specific life skills including communication and interpersonal skills. The second type concerns the improvement of health behaviours and health outcomes whereas the third type of goals relates to the educational outcomes like better self-management skills. A fourth type of goals described the social outcomes of health promotion so as to acquire social competency skills. The purpose is in achieving these goals through addressing health topics in PE class. According to the aims of the project Health(a)ware the teaching examples in this book aim to improve

specific health knowledge, attitudes, psycho-social skills, and physical fitness which enables them to manage a healthy lifestyle.

To enable students to acquire information, attitudes, and competencies about health and health-related physical activities, it is necessary to determine standards at different grade levels (Kolbe, 2002). Consequently, there is a demand to develop these standards for PE and to design an instrument to measure them (Kolbe, 2002). The result is a description of health literacy at different grade levels which build the background for participating in a healthy and active life-style and creating health-promoting conditions for themselves and for others in a social surrounding.

Traditionally, the curriculum for health education was problem-based and organised to avoid risk behaviours by providing information. In the 1990s the skill-based approach in school education led to a redesign of the PE curriculum in many European countries. Health education in PE class seeks, "to foster the attainment of personal skills in areas such as problem-solving, communication and decision-making" (St Leger, 2001, p. 202). Corresponding to the concept of health literacy a modern PE curriculum should offer a literacy-based conception which describes the standards of PE at different grade levels and includes all three levels of health literacy. The students should learn about the benefits of lifelong health-related physical activities, they should be able to identify influences on their health behaviour, they should learn to set goals and engage in physical activities in their daily life. Especially for secondary education the achievement of critical health literacy is essential and PE class but also cross-subject teaching and project teaching with their interdisciplinary health themes are the key components.

However, in most of the EU countries there is a lack of health standards in the PE curriculum. As reported by Hardman (2008) despite a commitment to a healthy focus in some countries, PE curriculum aims, themes and content are mostly oriented towards sports-dominated programmes, in which competitive activities still play an important role. Rink (2006) underlines this conclusion by suggesting that lessons based only on acquiring sport specific techniques should be avoided, and more focus devoted on the developing body through different perspectives and a variety of learning experiences. Our approach in the project Health(a)ware with the four modules "Body & Environment", Body & Time", "Body & Measurement" and "Body & Bodies" is in accordance with this viewpoint and delivers a didactical model for implementing different health topics.

As has already been stated, PE offers an extraordinary constellation for health topics. Health-related PE has an exceptional methodology of teaching which improves knowledge, individual abilities, skills, as well as behaviour and habits. The main characteristic of health-related PE is an educating process which includes experienced-based, practiced-based, and knowledge-based learning strategies. The health topic is very sensitive in the age group from 12-16. The teaching should, therefore, clearly go beyond bare knowledge transfer and focus on the wider experience available within learning. The students not only learn *to know* but *to do* and *to be* as well. Focussing on

bodily activities and experiences the subject has a unique function within the school-based health education and health promotion.

Physical education is always learning-by-doing. Concerning the physiological aspects of the human body it has traditionally been tightly linked to health-related topics within secondary education. PE teachers and sport experts are familiar with the need to apply a broad range of teaching methods in order to address their students successfully. It is an inevitably conjoined part of their teaching that they have to consider age group, sex, bodily abilities and physical condition. PE as a subject by itself is interdisciplinary with the scientific areas Sport Sociology, Movement and Training, Sport Medicine, as well as Sport Pedagogy, Sport Didactics and Sport Psychology (see Figure 1).

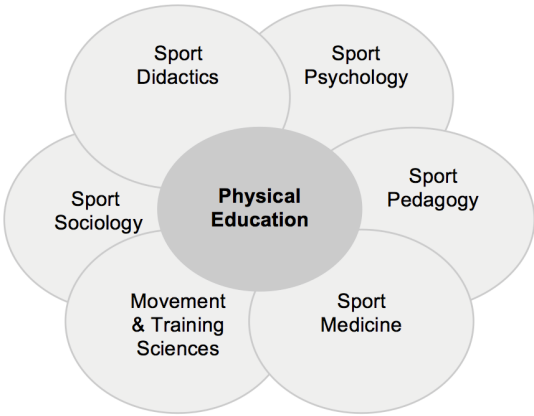


Figure 1: Scientific areas of Physical Education

These inherent characteristics are promoting the subject to an ideal starting point for the achievement of physical literacy. The concept of physical literacy and its role as part of personal health has emerged over the past two decades in connection with the current discussion on how PE can contribute to dealing with the growing problems of increased levels of students´ physical inactivity (McCarthy & Walker, 2014). In line with Whitehead (2001) physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to maintain lifelong physical activity. In this notion physical literacy can be seen as the basis for developing skills, knowledge, and attitudes needed to maintain a healthy and active life.

St Leger and Nutbeam (2000) proposed that the health promoting school concept contributes to four school-related outcomes which include lifelong learning skills, competencies and behaviours, specific knowledge and self-attributes. For PE class it means to learn about health-related physical activities in different life stages, to be able to exercise frequently, to know and understand the input of physical activities to good health and to have a good body perception or participate in physical activities in

a social context. All four school-related outcomes are to be seen in the achievement of Nutbeam´s three levels of health literacy (Nutbeam, 2000). However, the achievement of all three levels in PE class is dependent on the social-cultural surrounding of the school and the support of educational policies and authorities in the different European countries.

According to the idea of health literacy we differentiate in our approach between education and promotion of health-related physical activity. Education teaches students about the health benefits of physical and other health-related activities and it raises an awareness of the determinants of health. It is the framework for health promotion actions in PE class represented in health promotion outcomes as health literacy and health outcomes such as healthy lifestyles (Nutbeam, 2000). The teaching examples in this book describe how several health determinants like good body perception, good posture, social support, and energy balance contribute to good health and how to promote them in PE class. What we are trying to achieve in PE class is improving knowledge about the benefits of health-related physical activities and health risks of sedentary behaviour. This health knowledge provides the basis for the establishment of attitudes towards a healthy lifestyle and for the motivation and the intentions referring to the change of health behaviour (e.g., increase of leisure time physical activity). In addition, our concept underlines the importance of individual and social resources for a good health. The outcome of physical fitness, body experience and psycho-social skills enables the students to make healthy lifestyle choices in a supportive environment.

The acquirement of health literacy in PE class should raise an awareness of the individual, social and environmental determinants of health and physical activity and foster health promotion actions. Furthermore, it requires a didactical movement from a teacher-dominated to a student-centred approach with collaborative working on interdisciplinary themes. The four modules of the project Health(a)ware “Body & Environment”, Body & Time”, “Body & Measurement” and “Body & Bodies” categorise the wide range of individual, social and environmental health-related topics to reach health literacy on all three levels. The didactical concept of the teaching examples shows how teachers and other health professionals can achieve this goal.

2.1.4 Professionalisation of Teachers

The International Council of Sport Science and Physical Education conducted a worldwide study on the subject Physical Education (Doll-Tepper & Scoretz, 2001). They found that PE is statutory in the national curricula in 71% of 126 surveyed nations (Africa: 25%, Asia: 33%, Northern America: 72%, Europe: 87%). Yet, according to the known data only a minority of countries are offering a subject called “Health Promotion” or “Health Education” at school. Under this premise the European Network of Health Promoting Schools formulated ten principles at their conference

in Thessaloniki (Burgher, Barnekow Rasmussen & Rivett, 1997; WHO, 1998). The principle 5 "Curriculum" refers to the composition of a curriculum in respect of health and the principle "Teacher Training" concerns further, initial, and in-service training for teachers in respect of health (Principle 6). Together they indicate the importance of a curriculum-based health education and health promotion in addition to the provision of more initial and in-service teacher training in order to achieve a comprehensive view of health.

However, it has been stated that the current education of teachers is not adequate (Lister-Sharp et al., 1999). Moreover, in some countries the hours for in-service teacher training are minimal which means the call for PE teachers as professionals in charge of health promotion and transfer of health knowledge cannot be satisfied. "For students to achieve critical health literacy requires teachers to be cognisant with major health issues, competent in developing advocacy and social change skills and aware of key agencies and organizations in the community that provide the contextualisation of the issue for the students" (St. Leger, 2001, p. 203). Another difficulty is to find qualified "specialist" PE teachers rather at secondary level and "generalist" teachers at elementary level (Hardman & Marshall, 2000). This fact raises the problem that primary school is not setting the basis for further health education and promotion at secondary level.

All these problems are a challenge for further PE teacher professionalisation. In accordance with the demand of Whitehead and Almond (2013) teachers should have an understanding of health pedagogy in order to educate the students about health determinants. Additionally, the teacher should have good knowledge of pedagogical skills to promote engagement in physical activity and other health-related behaviours.

In our approach we design a pedagogical framework together with a specific health didactic methodology to continue the discussion about the implementation of health promotion strategies in the school setting. School development and the collaboration with external partners in conjunction with the professionalisation of teachers prepare schools to deal with the societal challenges. In the past, many school-related health programmes were done "on" or "to" the schools rather "by" or "with" them (Nutbeam, 2000). In the context of the professionalisation of PE teachers and other health professionals our approach is enabling them to teach the students at all levels of health literacy in PE class. Therefore, the teacher needs various competencies.

One issue raised by the report "Teacher Education Curricula in the EU" (Piesanen & Välijärvi, 2010) was the differentiation between teacher competencies like subject competencies, pedagogic competencies and integrating theory and practice (pp. 52-53). Subject competencies include the acquirement of health knowledge and the knowledge of health-related activities, pedagogic competencies consist of the knowledge of adequate methods to teach health-related issues and the last area refers to the ability to transfer health knowledge into practice in PE class that results in various health promotion actions.

Considering these competency groups in teacher training the PE teachers should acquire competencies for their own healthy lifestyle and for the implementation of health-related topics in PE class. Furthermore, the PE teacher should be enabled to deliver an impulse for interdisciplinary teaching across different subjects or in projects.

The implementation of school-related health education and health promotion varies in the participating countries of the Health(a)ware project and depends on the school system in each country of the EU. In Poland, for example, nation-wide guidelines and curricula exist, whereas e.g., in Germany, each state has their own strategy to implement health-related topics into school. In the majority of European countries health education or health promotion is not a standalone subject but covered in other subjects, such as, PE, Biology or in the Social Sciences.

To achieve a better awareness of school-related health education and health promotion in Europe an international collaboration like in the project Health(a)ware is necessary. The outcome of this project is an innovative concept of establishing health education and health promotion in teacher training. In this way, the outcome of the project contributes to the professionalisation of teachers in universities, teacher training and health institutions and it is an innovative approach for future initiative in this area.

References

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action-control: From cognition to behavior* (pp. 11–39). Heidelberg: Springer.

Antonovsky, A. (1979). *Health, stress, and coping. New perspectives on mental and physical well-being.* San Francisco: Jossey-Bass.

Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of child development. Vol. 6. Six theories of child development* (pp. 1–60). Greenwich, CT: JAI Press.

Burgher, M. S., Barnekow Rasmussen, V. & Rivett, D. (Eds.) (1997). *First Conference of the European Network of Health Promoting Schools: "The Health Promoting School – an Investment in Education, Health and Democracy".* Thessaloniki-Halkidiki, Greece.

Cauwenberghe van, E., Maes, L., Spittaels, H., Lenthe van, F. J., Brug, J., Oppert, J. M. & Bourdeaudhuij de, I. (2010). Effectiveness of school-based interventions in Europe to promote healthy nutrition in children and adolescents: Systematic review of published and 'grey' literature. *British Journal of Nutrition, 103*(6), 781–797.

Doll-Tepper, G. & Scoretz, D. (Eds.) (2001). *World Summit on Physical Education – Proceedings.* Schorndorf: Hofmann.

Hardman, K. (2008). The situation of Physical Education in schools: A European perspective. *Human Movement 9*(1), 5–18.

Hardman K. & Marshall J. J. (2000). *World-wide survey of the state and status of school Physical Education. Final Report.* Manchester: University of Manchester.

Janssen, I. & LeBlanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity, 7(*40), 1–16.

Kickbusch, I. (1997). Think health: What makes the difference? *Health Promotion International, 12,* 265–272.

Kolbe, L. J. (2002). Education reform and the goals of modern school health programs. *The State Education Standard 3*(4), 4–11.

Lister-Sharp, D., Chapman, S., Steward-Brown, S. & Sowden, A. (1999). Health promoting schools and health promotion in school: Two systematic reviews. *Health Technology Assessment, 3*(22), 1–207.

Luepker, R. V., Perry, C. L. & McKinlay, S. M. (1996). Outcomes of a field trial to children's dietary patterns and physical activity:: The child and adolescent trial for cardiovascular health (CATCH). *Journal of the American Medical Association, 275(10),* 768–776.

McCarthy, E. & Walker, S. (2014). Physical literacy and the effect of teacher/learner interactions: insights from Secondary School teaching. *Innovations in Practice 9*(1), 32–43.

Nutbeam, D. (1998). Health promotion glossary. *Health Promotion International, 13,* 349–364.

Nutbeam, D. (2000). Health literacy as a public goal: A challenge for contemporary health education and communication strategies in the 21st century. *Health Promotion International, 15,* 259–267.

Piesanen, E. & Välijärvi, J. (2010). *Education and Training 2010: Three studies to support school policy development. Lot 2: Teacher Education Curricula in the EU. Final Report.* Finnish Institute for Educational Research, Finland. Retrieved from http://ktl.jyu.fi/img/portal/17545/TEC_FINAL_REPORT_12th_Apr2010_WEB.pdf?cs=1271922032.

Ratzan, S. C. (2001). Health literacy: Communication for the public good. *Health Promotion International, 16,* 207–214.

Rink, J. E. (2006). *Teaching Physical Education for learning*. Toronto, ON: McGraw-Hill.

Rosenstock, I. M., Stretcher, V. J. & Becker, M. H. (1988). Social learning theory and the Health Belief Model. *Health Education Quarterly, 15(*2), 175–183.

Simonds, S. K. (1974). Health education as social policy. *Health Education Monograph, 2,* 1–25.

St Leger, L. (2001). Schools, health literacy and public health: possibilities and challenges. *Health Promotion International, 16,* 197–205.

St Leger, L. & Nutbeam, D. (2000). A model for mapping linkages between health and education agencies to improve school health. *Journal of School Health, 70,* 45–50.

Whitehead, M. E. (2001). The concept of physical literacy. *European Journal of Physical Education, 6*, 127–138.

Whitehead, M. E. & Almond, L. (2013). Creating learning experiences to foster physical literacy. *Physical Education Matters, 8,* 24–27.

WHO (1986). *Ottawa Charter for Health Promotion*. Geneva: World Health Organization.

WHO *(*1987*)*. The Ottawa Charter for Health Promotion*, Health Promotion International, 1,* iii–v.

WHO (1997). *Jakarta Declaration on Leading Health Promotion into the 21st Century.* Geneva: World Health Organization.

WHO (1998). *The Health Promoting School – an Investment in Education, Health and Democracy. Report of the 1st Conference of the European Network of Health Promoting Schools.* Copenhagen: World Health Organization.

Konrad Kleiner

2.2 Health Literacy as a Central Professional Competency in Teachers

2.2.1 Introduction

Teacher training follows the aim of being effective, goal-orientated and sustainable. Teacher students are confronted with various scientific disciplines (e.g., pedagogy, psychology, mathematics or sports) as well as with so-called interdisciplinary domains of science (e.g. health, inclusion, gender) which, although not directly interacting with one other, do affect each other (Porsch, 2011). It is evident that the students' socialisation influences their decisions for choosing a particular scientific specialty in the course of their studies; their convictions are strongly context-related (Porsch & Bromme, 2011).

Against this background, it is not only of great importance to consider how to initiate the imparting of qualifications for health literacy during teacher training and how to continue it later on, but likewise to take into account, which didactic qualifications students need to acquire in order to impart health literacy in a school context in a way that is suitable for them. In order to demonstrate the importance of health literacy for the target group of students, empirical research with high data quality is required. The increasing significance of exercise and diet is reflected in the increasing number of publications about physical activity in the course of child development and its predicator for health in the database "Pubmed". A particular focus lies in randomized intervention studies, which analyse the preventive effects of exercise and sports in children, frequently connected with the issue of obesity. According to the results published by the National Center for Chronic Disease Prevention and health Promotion (2011), in developed Western countries one third of the six to nineteen-year-olds is overweight and one-sixth is obese, respectively. Bibiloni, Pons and Tur (2013) support these results based on a meta-analysis of 25 representative national sets of data (three African, three American, eight Asian, nine European and two Oceania states).

Children pass through critically sensitive stages of life in their development, which are particularly susceptible to physical (in-) activity, relative mal or super nutrition, and obesity or even adiposities. Thus, the interaction system of school, which guarantees continual and temporarily defined contact with children and adolescents, needs to be supported in the process of instructing students to develop health literacy. Learning processes concerning health and exercise are neither gender-neutral (Zumstein & Süss, 2006), nor can they be approached without considering the student's individual biographical background. Only students themselves are capable of

changing their behaviour within their individual scope of action, which is defined by their surroundings (e. g., family, school). Likewise, a decision for or against a particular concept of qualifications regarding health literacy cannot be made separately from the conscious assumptions about a particular conception of humanity. Therefore, it seems indispensable to define education to health literacy as a context-driven interactive process.

In order to educate teacher trainees and teachers based on criteria of pedagogical and didactic professionalisation, education to health literacy is based on the imparting of numerous global and differentiated competencies: diagnostic competency, planning competency, professional skills, methodological competency, social competency and evaluation competency (Hallet, 2006; Oser & Oelkers, 2001). These subject-specific competencies should enable teachers to initiate sustainable learning and educational processes in students, as well as to accompany and supervise them in specific areas (e.g., health) throughout several years of their school career. In order to acquire the pedagogical and didactic-methodological skills in the field of health promotion, specialised scientific knowledge, for instance about theories, concepts or models of health promotion (e.g., salutogenesis, empowerment, setting-approaches, and health-belief-model), didactic-methodological skills for the implementation of complex issues, as well as sufficient practical teaching experience with heterogeneous groups of students are required.

These foundations of didactic-methodological knowledge enable teachers to competently organise the complexity of specific issues (e.g., health) for students in a target-oriented way and to impart these issues sustainably (Bouchard, Blair & Haskell, 2012; Dür & Felder-Puig, 2011; Kleiner, 2012). Teachers are not only assigned to impart factual knowledge in teaching-learning processes, but also to educate. This education, meaning the conscious and determined influence on the development of children and adolescents through specialized communication, is inextricably connected with the initialisation of values, the imparting of competencies and the realisation of goals (Fabel-Lamla, Heinzel & Klomfaß, 2008; Kleiner, 2011). In the case of health and well-being, the body is the foundation of what is purposefully communicated in the process of education in physical education.

Schooling, knowledge and competency form an intertwined unity in the sense of teaching-learning-processes, being the medium to acquire specific knowledge and skills, which in turn lead to the acquisition of competencies (Benner, 2007). A childhood determined by physical activity, exercise, playing and sports, not only is the foundation for the motoric, neuronal, socio-emotional and cognitive development (Opper, Worth, Wagner & Bös, 2007; Spitzer, 2007), likewise it forms a significant influencing factor on a healthy and active lifestyle later in life (Halle, Berg & Keul, 2000; Kraut, Melamed, Gofer & Froom, 2003; Telama, Yang, Viikari, Välimäki, Wanne & Raitakari, 2005; Twisk, Kemper & Van Mechelen, 2000). Thus, it becomes evident that the measures which enhance the quality of a teaching competency within the educational system in general, and in the area of exercise and sports within the

schooling system in particular, lie in the focus of expertise research (Starkes & Ericsson, 2003). One successful way to improve health literacy lies in understanding teaching as an expertise domain and in increasing the quality of teaching through the acquisition of expert knowledge (Gruber & Leutner, 2003). From the perspective of cognitive psychology, experts (e.g., health experts) have always been interpreted as a closed system. However, socio-cultural developmental theories have pointed out that the development of expertise contains a fundamental social dimension.

Experts are ascribed with their status through social attribution and the social recognition of their knowledge within a certain group. Alexander (2001), for instance, shows the various different interpretations of teachers' competency by means of an international qualitative survey and thereby questions the objectively used concept of domain and expertise. Thus, it can be concluded that health literacy is not only based on cognitive-psychological expertise research, but needs to be expanded by factors of socio-cultural competency (Wang, Ceci, Williams & Kopko, 2004).

The question, how students can be supported in taking interest in their own health and in pursuing it purposefully and persistently, even if it requires effort, plays an important role in the context of longitudinal studies about the health status of children and adolescents (Vasconcellos, Seabra, Katzmarzyk, Kraemer-Aguiar, Bouskela & Farinatti, 2014; Whittemore, Chao, Popick & Grey, 2013) as well as in the context of input- and outcome-evidence-studies of health-promoting interventions (Geuter & Hollederer, 2012). Professional expertise and didactic competency are a crucial foundation for qualitative teaching (Koeppen, Hartig, Klieme & Leutner, 2008), but also form a predicator for the implementation of health-promoting strategies within the schooling system (Dür, 2008; Strong et al., 2005; Tones, 2002). As a result, two pivotal dimensions can be identified as a prerequisite for life-long learning: (a) interest in education (e.g., health) and motivation for learning as well as (b) the competency to implement this interest and motivation successfully (Achtenhagen & Lempert, 2013). Assuming an increasing negative motivational situation on the side of the students in correlation to the years spent in the school system, it is of great importance to address the significance of the correlation between school success and health (Dür, 2008). The analysis of this correlation is not only relevant for education authorities and parents, but especially for teachers themselves as well university training facilities for teacher students.

2.2.2 Contextual Control – about the Environment of Health Literacy Initiation

From a systemic theoretical viewpoint, students' reaction to educational interventions is determined by their inner structure, which they have experienced in the course of their biographic confrontation with their environment (e.g., school, sports). The issue of context increases in importance wherever dealing with self-socialisation. Everything that happens, takes place within a specific context, and the inherent meaning

can only be explained in that respective context. From the perspective of students, their actions – even objectively unhealthy or harmful ones – are considered functionally appropriated within their own context. An educational intervention aiming at modifying the students' behaviour thus causes a fundamental tension, which can only be resolved through strengthening the students' self-socialisation.

The students themselves are not passively at the mercy of coercion within the school system, but can approach educational messages beneficially through self-socialisation. Here lies the quintessence of the educational process of health literacy: Only the students themselves and only by means of self-socialisation, they are capable of changing their unhealthy and irresponsible behaviour within a certain range of actions, because their applied strategies have not been suitable so far to manage and secure their own life. This perspective provokes one to contemplate, how long students are willing to be educated at all. The respective answer, however, is dependent on cultural norms and conditions as well as on the individual perspective.

In order to impart health promotion based on the subject of Physical Education in the school system, one has to consider and reflect on several complex issues for the modelling of health literacy. These issues are outlined in the following elaboration:

Thesis 1: *Health competency and health-promoting behaviours of children and adolescents can only be practiced adequately, when being understood as an interactive process within a complex system which is framed by contextual control.*

In the last decades, the issue of health has developed into a subject of multi-professional processing in several scientific disciplines. The individual professions have taken on different tasks in the field of health promotion and have found various different approaches for solutions. Undoubtedly, medicine represents the central scientific discipline in the field of research. Pedagogy and didactics can be considered the prevalent discipline when it comes to accompanying and realising strategies for health promotion. Taking into consideration the perspectives of particular studies dealing with the connection of health and biography (Hanses, 2010; Paul & Schmidt-Semisch, 2010), Gadamer (1993) points out the "hiddenness of health", which proves that the individual inevitably has to deal with disease. For students on the other hand, disease has so far never been a prevailing issue, since they mainly experienced themselves as healthy. However, the issue not only lies in dealing with strategies for self-socialisation and self-optimisation, but in particular in the re-evaluation of the individual. Undoubtedly, children enter school with a biographically acquired and subjectively shaped understanding of health, exercise and sports, nutrition, and contentment with their own body (Lohaus & Ball, 2006; Schaefer, 1990). Herein is one part of the complex issue of health and well-being: As Simon (1995) highlights, a medium of interpersonal interaction is required in order to gain an understanding of the intra-psychological processes within another person. Teachers construct images about their students, so that teaching-learning processes can be initiated with

a distinct target-group-orientation. However, only few students openly communicate their thoughts and feelings, mostly due to lack of trustworthy relationships. Another possibility to construct such an image is the interpretation of behaviour and actions. In team meetings and class conferences, teachers communicate assumptions about the inner world of their students based on derived explanations and constructs of observation. These interactive processes are part of the social system of school, which are determined by its context. However, health competency, meaning the ability of individual students to make decisions in their daily lives which enhance health, can simultaneously be counteracted by the system itself. Thus, studies about school absenteeism (Stearns & Glennie, 2006; Strom & Boster, 2007; Thoonen, Sleegers, Peetsma & Oort, 2011) and stigmatisation in the school context should not be concealed.

The other part of the health issue lies in the health status of the students, which is objectively determined according to medical norms and standards (Bibiloni et al., 2013; Seeman, 2000). In all modern Western societies at the point of entering school, a variety of problems can be identified in children, especially in the motoric system. Furthermore, mental issues such as aggression, anorexia, ADHS, lack of concentration, learning disorders and stress need to be mentioned (Bundesminsterium für Gesundheit und Frauen, 2006; Rusch & Irrgang, 2002; Samdal, Wold & Bronis, 1999). Physical activity and physical fitness in children and adolescents has been decreasing continuously throughout the last three decades (Bundesminsterium für Gesundheit, Familie und Jugend, 2007; Prätorius & Milani, 2004). Super-nutrition, obesity and adipositities form an endemic in many European countries (Bös, 2003; Brettschneider & Bünemann, 2004; Dür, 2008; Elmadfa, 2012; Fuchs, Göhner & Seelig, 2007; Graf & Starke, 2009; Lohaus, Jerusalem, & Klein-Heßling, 2006; Strong et al., 2005). With a high probability, it is predicted that obese children will continue to become obese into adulthood (Holterman, Holterman & Browne, 2012), direct or indirect consequences of adipositities are a significantly higher risk for coronary heart disease, auricular fibrillation, heart defect, hypertension, metabolic syndrome, hyper-insulinism, impaired glucose tolerance, type-II-diabetes as well as other heart metabolic diseases (Flynn, McNeil, Maloff, Mutasingwa, Wu, Ford & Tough, 2006; Zalesin, Franklin, Miller, Peterson & McCullough, 2008). Likewise, the connection between endurance performance, obesity and later medical consequences has been statistically proven (Klein, Fröhlich & Emrich, 2013; Ortega et al., 2013).

Thesis 2: *Teachers approach the issue of health and health competency with diverse sensitivity and advice and accompany students in issues of health literacy according to their varied status of professional training.*

Teacher training is supposed to be efficient and goal-orientated with regard to respective tasks. Systemically speaking, this means to enhance the contextual conditions for students in order to facilitate the inner learning process. Teacher training is meant to be goal-orientated in a sense that teachers are capable of competently supporting

their students according to their individual abilities and possibilities in specific interdisciplinary domains (e.g., health). The realisation of measures in health promotion within the school system can only be successful, if teachers receive extensive training in the area of health competency. This training should focus on the personal, social, physical and thus health-orientated development of students with the help of exercise, games and sports, as well as other factors.

Furthermore, teachers should be put in a position in which they can enable students to continually participate in health culture with its differentiated motives, characteristics and social organisation formats in an autonomous, responsible and active way. Additionally, teacher training includes a critical reflection of the problematic developments in health culture. Teachers of all subjects can plan, initiate and control health-promoting learning processes. They need to acquire a profound health-promoting diagnosis and promotion competency (health literacy). This includes well-founded knowledge about crucial health-orientated topics, theories, development perspectives and areas of application. Additionally, they should be able to plan health promotion in a target group and situation-orientated way, including the use of up-to-date teaching media and technologies, and to incorporate measures for the individual support of learning processes.

Thesis 3: *Health literacy and physical health are structurally connected in the subject Physical Education. However, health literacy needs to include all subjects of the school system and provide interlinked and focussed resources of health promotion for the sake of the students.*

The "Charter for Physical Education and Sport" (UNESCO, 1978, Article 1, p. 5) states that there is "a fundamental right of access to Physical Education and Sport". This implies the freedom of individual development as well as "guaranteed both with-in the educational system and in other aspects of social life (through having) full opportunities for practising Physical Education and Sport" (p. 5). In article 2, national agencies are challenged to support physical education and sports as a teaching subject in school: "Every overall education system must assign the requisite place and importance to Physical Education and Sport in order to establish a balance and strengthen links between physical activities and other components of education" (p. 6).

In their article, Mõttus, Johnson, Murray, Wolf, Starr and Deary (2014) confronted themselves with the question: "Towards Understanding the Links between Health Literacy and Physical Health" and pointedly concluded that, "low health literacy predicts poor health" (p. 164). At the World Summit of Physical Education Hardman and Marshall (2009) pointed out Physical Education is an obligatory subject in more than 92% of the 126 states taken into account. However, in only 71% of the evaluated states, Physical Education is actually provided in accordance with the national legislative regulations. In 29% of the states, PE is not at all implemented in school according to

legal requirements. Especially in Africa (75%), Asia (67%), Central and Latin America (50%) and partly in Southern Europe (50%), the legal requirements for the opportunities concerning the subject PE are only realised inadequately. The school timetables and the syllabus of the individual countries list the number of school lessons allocated for PE. The required number of lessons per week is not only dependent on the individual school type, but also differs according to the grade in the respective countries. Hardman and Marshall (2001) showed that in only 56% of the evaluated countries the amount of time provided is identical, while in 44% of the countries it strongly fluctuates according to school type and grade. Interestingly, for students in primary school and in the first years at secondary school (age 6-12), the syllabus dictates the highest number of PE lessons. In higher grades and thus with increasing age, the number of lessons allocated for PE continually decreases, and frequently it is even offered on a voluntary basis towards the end of high school (age 16-18).

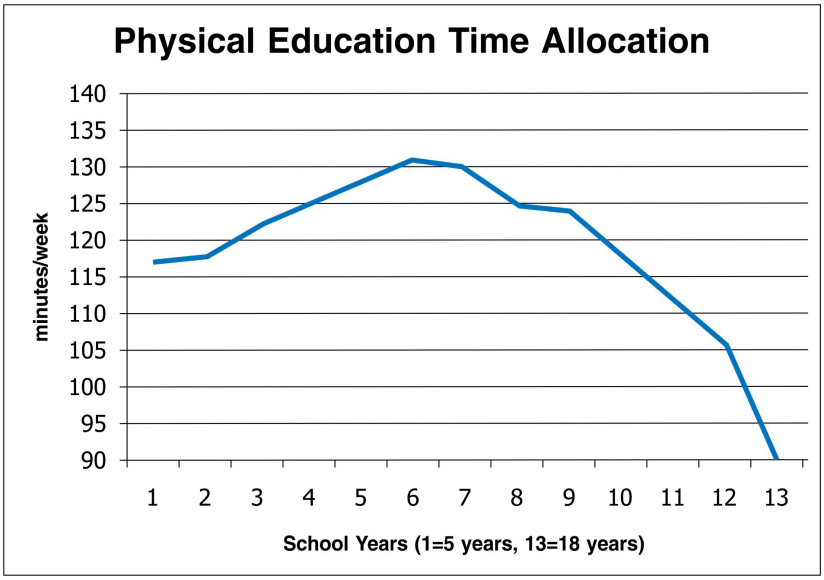


Figure 2: PE time allocation (min/week) by year (Hardman & Marshall, 2009, p. 34)

PE is the only subject in school which, through a variety of topics (e.g., physical activity, coordination, nutrition, stress management, performance, body experience, First Aid, body posture training), interdisciplinary sport science (e.g., pedagogy, didactics, biomechanics, sociology, psychology) and multi-perceptivity (e.g., expression, impression, adventure, performance, health), is able to prepare students for a health-promoting lifestyle, by means of self- and social competency, as well as expertise and the promotion of internal and external resources over a time span of approximately 8 years (Lohaus & Ball, 2006; Lohaus et al., 2006; Strong et al. 2005; Telama et al. 2005). However, due to a lack of resources, PE as a distinct subject is partly overburdened by

imparting exercise-related health literacy like exercise competency, control competency and self-regulation competency (Sudeck & Pfeifer, 2013). The goal of imparting health literacy, as the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions, and it requires the involvement of all subjects and their teachers.

Indisputably, the expertise of teachers is comparably narrow and mostly only valid within the context of their respective subject and in the context of the students they teach. Against this background, which comprehensively addresses the problem of health literacy, the question needs to be posed as to how health literacy can be modelled in order to acquire expertise in the area of health promotion.

2.2.3 Health Literacy – Terminology and Research Status

Terminology plays an organising role in scientific discourse. The terms "health", "competency" and "standard", but especially the term "health literacy" are not used uniformly in the context of educational science, medicine, health science or training programmes for health promotion. However, only through the predominant contextual acceptance of the term of health literacy, it can become a certain standard. This prerequisite leads to the fact that the term enables certain reliability in discussion in the systems of education, economy or medicine. With their study of the efficacy of teacher training systems, Oser and Oelkers (2001) assume certain standards (which definitely can be equated with the concept of competency) and present a basic position of competency genesis. They formulate 88 standards, which, dependent on their combination and intensity of teaching strategies, are summarising in 12 areas: 1. teacher-student-relationships and positive feedback, 2. diagnosis and student support, (...), 11. teachers' self-management competency, 12. general didactic and methodological competencies. However, the thematic dimension "health literacy" was neither added to this extensive catalogue nor explicitly addressed in any of the 88 standards. As Lenartz (2012) points out, neither the term „standards" (prevalent in educational science), nor the term „competency" (which substituted „standard" in the last decade), but instead the English term "literacy" or "health literacy", respectively, prevails, which in turn formed the concept of health competency. Assuming that literacy subsumes basic cultural technologies such as reading and writing, we can understand health literacy as the ability to read, understand and use health information (Lenartz 2012; Lenartz, Soellner & Rudinger, 2014). This definition can be considered as the functional approach to health literacy.

The characterisation of health literacy provided by the UNESCO explicitly mentions functional health literacy as the ability to apply reading and numeracy skills to health care settings. The U.S. National Library of Medicine National Institutes of Health describes health literacy as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed

to make appropriate health decisions. This clinical-medical approach to health literacy which is especially prevalent in Anglo-American countries, was contextually expanded by the WHO (1998) that health literacy represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health (Nutbeam, 1998). Thereby, health position gains a clearly broadened contextual position, in the sense that health literacy is now being interpreted in terms of a life competency (health promotion and preventative health care) and located as a "life-worldly conception approach" (Pleasant & Kuruvilla, 2008; Soellner, Huber, Lenartz & Rudinger, 2009).

In accordance with Lenartz et al. (2014), both of the two latter approaches to health literacy operate in a predominantly autonomous fashion. The following historical steps of a contextual precision and societal implementation of health literacy focus on social, economic and environmental dimensions, which are also connected to the position of health promotion represented in the Ottawa Charter. One of the most important representatives of an outcome-model for health promotion is Nutbeam, who distinguishes between three sequential levels of health literacy: (a) functional health literacy, (b) interactive health literacy as the development of personal skills und (c) critical health literacy as the personal and community empowerment. According to this model, the levels of health literacy in this sequential order lead to higher autonomy and personal empowerment. Health literacy is more than the ability to read leaflets or make appointments. Health literacy encompasses knowledge competency, personal skills and self-consciousness to actively enhance one's personal health by implementing changes of lifestyle.

The importance of health literacy becomes particularly evident in situations of crisis. Zarcadoolas, Pleasant and Greer (2005) base their work on the Anthrax crisis, to develop a wide-ranged model of Public Health Literacy and defines it as the wide range of skills, and competencies that people develop to seek out, comprehend, evaluate, and use health information and concepts to make informed choices, reduce health risks, and increase quality of life. Similarly to Zarcodoolas et al, (2005), Kickbush and Maag (2008) regard their Health Literacy Concept as contextualized and integrated into a widespread social framework. According to Kickbusch and Maag (2008), the initial task-based definition is substituted by a skill-based conceptualisation of literacy. Health literacy is defined as a focus on the knowledge and abilities an adult must possess in order to perform in various societal domains. The concept itself is associated with levels of education and an important predictor of community participation, employment, and health status.

Health literacy was formerly defined as a number of measures to secure health in the 19th century (1st health revolution) and later viewed under the aspect of health care and insurance in case of disease (2nd health revolution). Nowadays, it is viewed under a stronger socio-political focus from the perspective of health promotion (3rd health revolution). Abel and Bruhin (2003) define health literacy as the knowledge-based

competence for a health-promoting lifestyle. This knowledge is primarily imparted through culture, education and upbringing. Health is thus characterized in the context of cultural capital. In the course of the development of the internet, the question of eHealth literacy became relevant.

The term eHealth was introduced by Norman and Skinner (2006a), who describe it as the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem (Norman & Skinner, 2006b). On the scale, which they developed to measure eHealth literacy, they distinguish between analytical and context-specific skills: "Analytical skills cover traditional literacy and numeracy, information literacy, and media literacy; context-specific skills on the other hand comprise health literacy, computer literacy, and science literacy" (Soellner Huber & Reder, 2014, p. 30).

The construct of health literacy cannot be defined without explaining the terms "competency" and "literacy". During the past decade, these terms shaped the educational discussion although without achieving consensus. For instance, Weinert (2001) differentiates between six ways of using the term literacy/competence (e.g., as a general cognitive disposition for performance, as a context-specific cognitive disposition for performance, as the ability for necessary motivational orientation to tackle challenging tasks, as a meta-competence and key-competence). In the field of teaching methodology, competencies are understood as acquirable cognitive abilities and skills, which are necessary to solve particular domain-related problems.

The connection of competency with factual knowledge is evident. Beyond that, in educational-scientific research the term competency experiences a broad spectrum, for instance in terms of professional, foreign-language, individual, communicative, moral or operative competency. By means of international examples they point out, that while generally between 7 and 12 educational competencies are differentiated, at least five criteria, such as performance of the end-product or goal-state of instruction, are inevitably necessary in order to define educational competencies comprehensively (Albanese, Mejicano, Mullan, Kokotailo & Gruppen, 2008).

Pedagogic competency, according to Tenorth and Tippelt (2012), consists of social and didactic abilities and skills, which are necessary to practice a pedagogic occupation and to find solutions for the occurring problems in these contexts. Based on this Sudeck and Pfeiffer (2013) elaborate characteristics of exercise-related health literacy. They describe those characteristics additively as a conglomerate containing cognitive, as well as motoric abilities and skills, which are necessary to engage in health-promoting physical activity. Likewise, it contains the motivational, volitional and social readiness or abilities, respectively, to successfully and responsibly imbed health-promoting physical and sportive activities into the variable situations of everyday life (Sudeck & Pfeiffer, 2013).

The research status in the field of health literacy can be investigated in several databases on the basis of particular descriptors, such as PsycINFO, PSYNDEX, PsyJOURNALS, PubMed and ISI-Web of Science. With the help of the internet search

engine Google, individual terms have been investigated quantitatively and unsystematically. The current results (Dec 8th, 2014) show 86.500 results searched on for "Gesundheitskompetenz" (the German term for health competency), 16.600.000 results for "health literacy", 1.440.000 results for "components of health literacy" and 32.400.000 for "health competencies".

In accordance with Riegler and Langmann (2011), who conducted a research from 2000 to 2011, and with Soellner et al. (2009), who conducted research from 1995 until 2009, it is evident that the German term barely ever appears in any scientific databases, while the English terms „health literacy" and „health competencies" are more frequently mentioned. In addition, attention needs to be directed to the fact that from 2000 until 2014, the database PsycINFO showed 1676 results for the term „health literacy". The relatively young term eHealth Literacy, which is one partial area of health literacy, can be found relatively infrequently on the internet, appearing 331.000 times.

These indications for literary research point out the dynamics of the development and the relevance of the topic health literacy in the German and English-speaking world. Based on these approaches and developments of health literacy, strategies for modelling and measuring health literacy will be discussed. With the help of the methodological procedure of concept mapping (a technique to visually depict knowledge and information), expert interviews with professionals in the health sector, as well as multivariate methods (cluster analysis, MDS), Soellner, Huber, Lenartz and Rudinger (2010) develop a structural model of health literacy which identifies 9 clusters (see figure 3): (1) self-regulation, (2) self-perception, (3) action control, (4) basic skills, (5) information processing, (6) information acquisition, (7) systemic knowledge and systemic actions, (8) communication and cooperation, (9) beneficial personality traits. Health literacy is summarized in a network of (a) basic skills (literacy/numeracy), (b) action competence (with 4 competence areas), (c) knowledge, and (d) motivation.

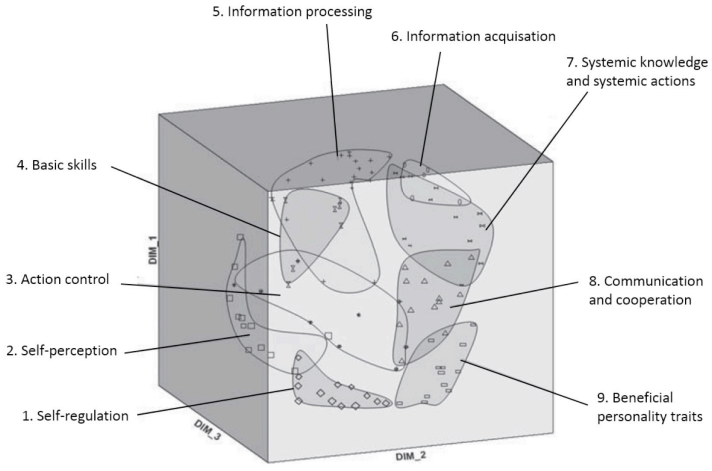
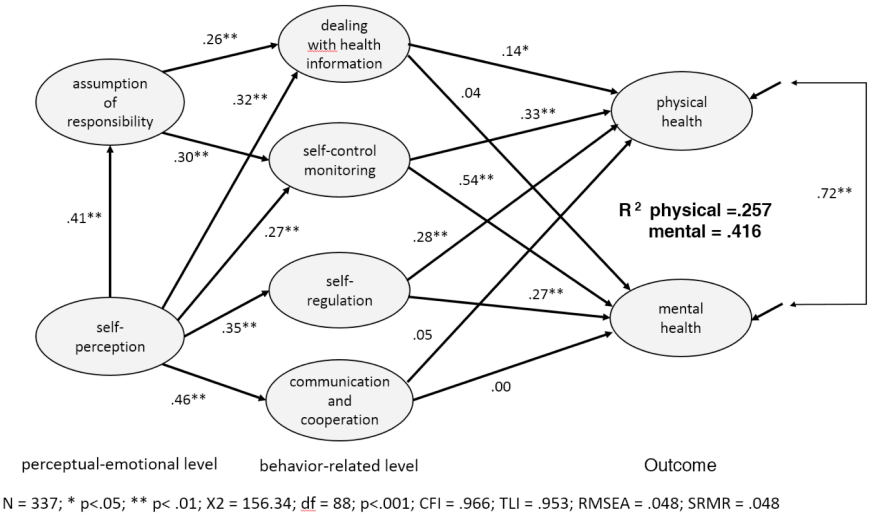


Figure 3: 3-dimensional concept map (Soellner et al., 2010, p.109)

Based on this model Lenartz et al. (2014) described contextual components of health literacy on the level of key qualifications. In particular, his focus lies on implementing abilities of health-related self-guidance, self-regulation, and self-control.



N = 337; * p<.05; ** p< .01; X2 = 156.34; df = 88; p<.001; CFI = .966; TLI = .953; RMSEA = .048; SRMR = .048

Figure 4: Structural model of the relationship between the components of health literacy and the scales of physical and mental health of the WHOQOL-BREF (World Health Organization Quality of Life) (Lenartz et al., 2014, p. 31)

The structural model shows that on a perceptive-motivational level health-related self-perception is of importance for all other competence dimensions. Similarly important is the role of taking responsibility for one's own health. On the action-related level, dealing with health information plays a crucial role with regard to physical health. It is evident that depending on situational requirements, the ability of dealing with health information as well as the communication and cooperation in health-related questions is of great importance (Soellner et al., 2014; Steckelberg, Hülfenhaus, Kasper, Rost & Mühlhauser, 2009). Due to research about the modelling of health literacy, the various levels and dimensions of the construct can be identified, depicted and thus made available for the process of health promotion.

2.2.4 Insight and Consequences for Approaching Health Literacy

Professional knowledge is the knowledge that teachers need in order to practice their profession and to plan, conduct and evaluate their teaching. Pedagogic professional knowledge is independent from any subject and enables teachers to create an atmosphere, in which learning can take place. Competencies, competency diagnostics,

as well as the promotion and development of professional competencies are a great demand in the field of teacher training. In order to capture and diagnose competencies, Frey (2006) lists 47 tools, which were published between 1991 and 2005 and which, against the quality criteria of reality, validity and objectivity, seemed suitable to diagnose abilities and skills in prospective teachers (Bjegovic-Mikanovic, Vukovic, Otok, Czabanowska & Laaser, 2013).

The analysis of these instruments shows that four groups of competencies seem of particular relevance: Professional, social, methodological and personal competency. In the context of forming a model of pedagogic competency, aspects of health literacy remain vague, or even completely unmentioned. The most frequently used instruments for the detection of health literacy are the Rapid Estimate of Adult Literacy in Medicine (REALM and REALM-R), and the Wide Range Achievement Test (WRAT), a screening procedure which measures basic skills such as reading, calculating and spelling, the Test of Functional Health Literacy in Adults (TOFHLA), which is designed as a comprehension test containing 50 examples close to everyday life, and finally the Short Assessment of Health Literacy for Spanish-speaking Adults (SAHLSA), which similarly tests how well the participants can understand and process given information.

Against the background of these results and from the perspective of health promotion and health literacy, the question arises as to which measures can be taken into account to ensure the acquisition of basic knowledge about health in subject-specific and cross-subject teaching. How can a critical approach to health information be promoted and how can appreciative and trustworthy communication concerning health issues are enabled? It is dependent on the teachers themselves and their pedagogic professionalism, when it comes to imparting topics of health literacy, such as self-regulation, self-perception, information acquisition, basic skills and systemic knowledge. Professional, didactic-methodological and pedagogical knowledge, teaching experience and epistemological convictions and beliefs form the prerequisites which arouse the students' interest for health-related questions. With their existing and reflected health competencies, teachers have a tremendous influence on the learning progress of their students. The results demand a way of teaching which is characterized by an active teacher-role, a low level of teacher control, and co-operative ways of working and clear structures regarding teaching processes. Research has proven that students learn more from teachers who possess certain didactic competencies and characteristics than from teachers who don't.

Learning for health and health literacy is based on didactic principles in the school setting and will be successful, if tasks are experienced and not only tackled. Thus, in the school setting, learning for health needs to be communicated as a long-term process. The acquisition of health literacy is particularly successful when integrated and arranged as an issue of daily school routine over a longer period of time. Short-term and individual initiatives are barely sustainably and not capable of building sensitivity and knowledge for health literacy in students.

Connection to prior knowledge: Learning is particularly successful when health-promoting topics, goals and content are adequate for the individual student. Analysing the status of knowledge concerning health, associative connections and possible links to other subjects and school routine can serve as a manifold, exciting and active starting point.

Generating links to prior knowledge: The dealing with individual experiences of children and adolescents in the area of health is a necessary prerequisite for goal-oriented learning for health and exercise.

Selection of goals, content and topics: Health-promoting teaching processes follow the aim of supporting the physical, mental and social potential of students, in order to build health resources. In connection with school plans and in coordination with every day-life situations of the children and adolescents, the topic health exercises needs to be taught in a didactically differentiated way, which means: adequate teaching (memory aids, assigning tasks which enable students to make reasonable decisions about their individual health) and consequently teaching correctly (skilled application, assigning additional tasks, evaluate tasks, use worksheets, recapitulation, draw consequences, give room to fun, etc.)

Interlinking selected topics, content and goals: Children and adolescents need to be introduced to various fields of exercise (e.g., recreational sports), and health-related topics (e.g., nutrition, smoking, alcohol, noise, posture, stress) need to be elaborated and linked with other subjects (see the teaching examples). Learning for health and exercise within the school setting is an active process, which creates a balance between instruction and construction. Teachers are prompted to act in didactically varied ways and to use adequate didactic forms of knowledge (e. g., "know-that", "know-how", "knowing in action").

To sum up, learning for health and exercise in the school setting is particularly successful, if the three qualitative dimensions of didactic staging are considered: multi-perspectival, multi-modal and multi-productive work (Reich, 2009). The heterogeneity of the students requires addressing specific topics (content) from several perspectives in different situations. Students should realise the importance of the differences between perspectives, and experience how and in what ways their own perspectives can be enriched (e.g., nutrition, happiness, etc.). If the students are characterised by great heterogeneity, then the ways of teaching need to be as well.

The "adventures inside the head", the results of learning and the active dealing with specific questions of health, exercise, playing and sports are variously complex. The more extensively they are being reflected, the more sustainable are the results. As a basic principle, one should focus on results and formulate memory aids. Thus, feedback becomes a part of self-regulated and comprehensive learning. Trusting in one's own possibilities, abilities and skills (e. g., be realistic!), trusting in solvability (e. g., recognize what is possible!) and trusting in meaningfulness and variability (e. g., change the circumstances!) can be perceived as the fundamental principles for learning for health and exercise.

References

Abel, T. & Bruhin, E. (2003). Wissensbasierte Gesundheitskompetenz. In Bundesinstitut für gesundheitliche Aufklärung (Ed.), *Leitbegriffe der Gesundheitsförderung* (pp. 128–131). Schwabenstein: Sabo.

Achtenhagen, F. & Lempert, W. (Eds.). (2013). *Lebenslanges Lernen im Beruf–seine Grundlegung im Kindes- und Jugendalter. Band 3: Psychologische Theorie, Empirie und Therapie*. Wiesbaden: VS.

Albanese, M. A., Mejicano, G., Mullan, P., Kokotailo, P. & Gruppen, L. (2008). Defining characteristics of educational competencies. *Medical Education, 42*(3), 248–255.

Alexander, R. (2001). *Culture and pedagogy: International comparison in primary education*. Malden: Blackwell.

Benner, D. (Ed.). (2007). *Bildungsstandards. Instrumente zur Qualitätssicherung im Bildungswesen; Chancen und Grenzen – Beispiele und Perspektiven*. Paderborn: Schöningh.

Bibiloni, M., Pons, A. & Tur, J. A. (2013). Prevalence of overweight and obesity in adolescents: A systematic review. *ISRN Obesity, 392747*. doi: 10.1155/2013/392747.

Bjegovic-Mikanovic, V., Vukovic, D., Otok, R., Czabanowska, K. & Laaser, U. (2013). Education and training of public health professionals in the European Region: Variation and convergence. *International Journal of Public Health, 58*(6), 801–810.

Bös, K. (2003). Motorische Leistungsfähigkeit von Kindern und Jugendlichen. In W. Schmidt, I. Hartmann-Tews & W. D. Brettschneider (Eds.), *Erster Deutscher Kinder- und Jugendsportbericht* (pp. 85–107). Schorndorf: Hofmann.

Bundesministerium für Gesundheit, Familie und Jugend (Ed.) (2007). *Die Gesundheit der* österreichischen SchülerInnen *im Lebenszusammenhang. Ergebnisse des WHO-HBSC-Survey 2006*. Wien: Eigenverlag.

Bundesministerium für Gesundheit und Frauen (Ed.) (2006). *Gesundheitsbericht.* Wien: Eigenverlag.

Bouchard, C., Blair, S. N. & Haskell, W. L. (2012). *Physical activity and health* (2nd Ed.). Champaign, Ill.: Human Kinetics.

Brettschneider, W. D. & Bünemann, A. (2004). *National report: Young people's lifestyles and sedentariness*. University of Paderborn, Germany.

Dür, W. (2008). *Gesundheitsförderung in der Schule.* Bern: Huber.

Dür, W. & Felder-Puig, R. (Eds.). (2011). *Lehrbuch Schulische Gesundheitsförderung.* Bern: Huber. Retrieved from http://ebooks.ciando.com/book/index.cfm/bok_id/ 229085.

Elmadfa, I. (2012). *Österreichischer Ernährungsbericht 2012*. Wien: Bundesministerium für Gesundheit.

Fabel-Lamla, M., Heinzel, F. & Klomfaß, S. (2008). Schule. In H. Faulstich-Wieland & P. Faulstich (Eds.), *Erziehungswissenschaft* (pp. 447–469). Reinbek: Rowohlt.

Flynn, M. A., McNeil, D. A., Maloff, B., Mutasingwa, D., Wu, M., Ford, C. & Tough, S. C. (2006). Reducing obesity and related chronic disease risk in children and youth: A synthesis of evidence with 'best practice' recommendations. *Obesity Reviews, 7*(Suppl. 1), 7–66. doi: 10.1111/j.1467-789X.2006.00242.x.

Frey, A. (2006). Methoden und Instrumente zur Diagnose beruflicher Kompetenzen von Lehrkräften – eine erste Standortbestimmung zu bereits publizierten Instrumenten. *Zeitschrift für Pädagogik*, *51*,(Suppl.), 30–46.

Fuchs, R., Göhner, W. & Seelig, H. (Eds.). (2007). *Aufbau eines körperlich-aktiven Lebensstils*. Göttingen: Hogrefe.

Gadamer, H.-G. (1993). Über die Verborgenheit der Gesundheit. Frankfurt/M.: Suhrkamp.

Geuter, G. & Hollederer, A. (Eds.) (2012). *Handbuch Bewegungsförderung und Gesundheit.* Bern: Huber.

Graf, D. & Starke, D. (2009). Prävention von Übergewicht und Adipositas im Kindes- und Jugendalter – vom Modell zur Anwendung. *Deutsche Zeitschrift für Sportmedizin, 60*, 108–111.

Gruber, H. & Leutner, D. (2003). Die kompetente Lehrperson als Multiplikator von Innovation. In I. Gogolin & R. Tippelt (Eds.), *Innovation durch Bildung. 18. Kongress der Deutschen Gesellschaft für Erziehungswissenschaft* (pp. 263–274). Wiesbaden: VS.

Hagemann, N., Tietjens, M. & Strauß, B. (2007). *Psychologie der sportlichen Höchstleistung*. Göttingen: Hogrefe.

Halle, M., Berg, A. & Keul, J. (2000). Adipositas und Bewegungsmangel als kardiovaskuläre Risikofaktoren. *Deutsche Zeitschrift für Sportmedizin, 51*, 123–129.

Hallet, W. (2006). *Didaktische Kompetenzen*. Stuttgart: Klett.

Hanses, A. (2010). Gesundheit und Biographie – eine Gradwanderung zwischen Selbstoptimierung und Selbstsorge als gesellschaftliche Kritik. In B. Paul & H. Schmidt-Semisch (Eds.), *Risiko Gesundheit. Über Risiken und Nebenwirkungen der Gesundheitsgesellschaft* (pp. 89–104). Wiesbaden: VS.

Hardmann K. & Marshall J. (2009). *Second World-wide Survey of School Physical Education*. *Final Report.* Berlin: ICSSPE/CIEPSS.

Holterman, M. J., Holterman, A. X. & Browne, A. F. (2012). Paediatric obesity. *Surgical Clinics of North America*, *92*(3), 559–582.

Kickbusch, I. & Maag, D. (2008). Health literacy. In K. Heggenhougen & S. Quah (Eds.), *International Encyclopaedia of Public Health*, *Vol. 3,* pp. 204–211). San Diego: Academic Press.

Klein, M., Fröhlich, M. & Emrich, E. (2013). Motor performance and bodyweight of children and adolescents in Saarland – status quo. *European Journal of Sport Science, 13*(3), 280–289.

Kleiner, K. (2011). Die Form der Erziehung: Lernen für Gesundheit und Bewegung. In W. Dür & R. Felder-Puig (Eds.), *Lehrbuch Schulische Gesundheitsförderung* (pp. 179–187). Bern: Huber. Retrieved from http://ebooks.ciando.com/book/index. cfm/bok_id/229085.

Kleiner, K. (Ed.). (2012). *Fachdidaktik „Bewegung und Sport" im Kontext. Zwischen Orientierung und Positionierung*. Purkersdorf: Hollinek.

Koeppen, K., Hartig, J., Klieme, E. & Leutner, D. (2008). Current issues in competence modelling and assessment. *Journal of Psychology, 216,* 61–73.

Kraut, A., Melamed, S., Gofer, D. & Froom, P. (2003). Effect of school age sports on leisure time physical activity in adults: The CORDIS Study. *Medicine & Science in Sports & Exercise, 35,* 2038–2042.

Lenartz, N. (2012). *Gesundheitskompetenz und Selbstregulation.* Göttingen: V & R Unipress.

Lenartz, N., Soellner, R. & Rudinger, G. (2014). Gesundheitskompetenz. Modellbildung und empirische Modellprüfung einer Schlüsselqualifikation für gesundes Leben. *DIE-Zeitschrift, 2*, 29–32.

Lohaus, A. & Ball, J. (2006). *Gesundheit und Krankheit aus der Sicht von Kindern*. Göttingen: Hogrefe.

Lohaus, A., Jerusalem, M., Klein-Heßling, J. (Eds.). (2006). *Gesundheitsförderung im Kindes- und Jugendalter*. Göttingen: Hogrefe.

Mõttus, R., Johnson, W., Murray, C., Wolf, M. S., Starr, J. M. & Deary, I. J. (2014). Towards understanding the links between health literacy and physical health. *Health Psychology, 33*(2), 164–173.

National Center for Chronic Disease Prevention and Health Promotion (2011). School health guidelines to promote healthy eating and physical activity. *MMWR Recommendations and Reports 60*(5), 1–76.

Norman, C.D., & Skinner, H.A. (2006a). eHealth literacy: Essential skills for consumer health in a networked world. *Journal of Medical Internet Research, 8*(2), e9.

Norman, C.D., & Skinner, H.A. (2006b). eHEALS: The eHealth literacy scale. *Journal of Medical Internet Research, 8*(4), e27.

Nutbeam, D. (1998). Health promotion glossary. *Health Promotion International, 13,* 349–364.
Opper, E., Worth, A. Wagner, M. & Bös, K. (2007). Motorik-Modul (MoMo) im Rahmen des Kinder- und Jugendgesundheitssurveys (KiGGS). *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz, 50*, 879–888.
Ortega, F. B., Artero, E. G., Ruiz, J. R., Espana-Romero, V., Jimenez-Pavon, D., Vicente-Rodriguez, G., … Castillo, M. J. (2013). Physical fitness levels among European adolescents: The HELENA study. *British Journal of Sports Medicine*, *45*(1), 20–29.
Oser, F. & Oelkers, J. (Eds.). (2001). *Die Wirksamkeit der Lehrerbildungssysteme. Von der Allrounderbildung zur Ausbildung professioneller Standards*. Chur: Rüegger.
Paul, B. & Schmidt-Semisch, H. (2010). *Risiko Gesundheit. Über Risiken und Nebenwirkungen der Gesundheitsgesellschaft*. Wiesbaden: VS.
Pleasant, A. & Kuruvilla, S. (2008). A tale of two health literacies: Public health and clinical approaches to health literacy. *Health Promotion International, 23,* 152–159.
Porsch, T. (2011). *Wer kann das wissen? Quellenauswahl im Kontext der Evidenzsuche*. Berlin: Logos.
Porsch, T. & Bromme, R. (2011). Effects of epistemological sensitization on source choices. *Instructional Science, 39,* 805–819.
Prätorius, B. & Milani, T. L. (2004). Motorische Leistungsfähigkeit bei Kindern: Koordinations- und Gleichgewichtsfähigkeit: Untersuchung des Leistungsgefälles zwischen Kindern mit verschiedenen Sozialisationsbedingungen. *Deutsche Zeitschrift für Sportmedizin, 55,* 172–176.
Reich, K. (2009). *Lehrerbildung konstruktivistisch gestalten*. Weinheim: Beltz.
Riegler, A. & Langmann, H. (2011). Healthy Literacy – die Kluft zwischen Theorie und Praxis. In G. Schreier, D. Hayn & E. Ammenwerth (Eds.), *Tagungsband der eHealth 2011* (pp. 265–270). Wien: OCG.
Rusch, H. & Irrgang, W. (2002). Aufschwung oder Abschwung? Verändert sich die körperliche Leistungsfähigkeit von Kindern und Jugendlichen oder nicht? *Haltung und Bewegung, 22*(2), 5–10.
Samdal, O., Wold, B. & Bronis, M. (1999). The relationship between students' perceptions of the school environment, their satisfaction with school and perceived academic achievement: An international study. *School Effectiveness and School Improvement, 10*, 296–320.
Schaefer, G. (1990). Gesundheit – Vorstellungen in verschiedenen Kulturen. *Friedrich Jahresheft, 8,* 10–13.
Seeman, T. E. (2000). Health promoting effects of friends and family on health outcomes in older adults. *American Journal of Health Promotion, 14*, 362–370.
Simon, F. B. (1995). *Die andere Seite der Gesundheit*. Heidelberg: Auer.
Soellner, R., Huber, St., Lenartz, N. & Rudinger, G. (2009). Gesundheitskompetenz – ein vielschichtiger Begriff. *Zeitschrift für Gesundheitspsychologie, 17*, 105–113.
Soellner, R., Huber, St., Lenartz, N. & Rudinger, G. (2010). Facetten der Gesundheitskompetenz – eine Expertenbefragung. *Zeitschrift für Pädagogik, 56*(Suppl.), 104–113.
Soellner, R., Huber, S. & Reder, M. (2014). The concept of eHealth literacy and it`s measurement. *Journal of Media Psychology, 26*(1), 29–38.
Spitzer, M. (2007). *Lernen. Gehirnforschung und die Schule des Lebens*. Heidelberg: Springer.
Starkes, J. & Ericsson, K. (2003). *Expert performance in sport*. Champaign: Human Kinetics.
Stearns, E. & Glennie, E. J. (2006). When and why dropouts leave high school. *Youth and Society 38*(1), 29–57.
Steckelberg, A., Hülfenhaus, C., Kasper, J., Rost, J. & Mühlhauser, I. (2009). How to measure critical health competences: Development and validation of the Critical Health Competence Test (CHC Test). *Advances in Health Sciences Education, 14*(1), 11–22.
Strom, R. E. & Boster, F. J. (2007). Dropping out of high school: A meta-analysis assessing the effect of messages in the home and in school. *Communication Education, 56,* 433–452.

Strong, W. B., Malina, R. M., Blimkie C. J., Daniels, S. R., Dishman, R. K., Gutin, B., Hergenroeder, A. C., … Trudeau, F. (2005). Evidence based physical activity for school-age youth. *The Journal of Pediatrics*, *146,* 732–737.

Sudeck, G. & Pfeifer, K. (2013). Bewegung in der Rehabilitation–ICF-Bezug, Kompetenzorienzierung, Nachhaltigkeit. *Public Health Forum, 21*(2). doi: 10.1016/j.phf.2013.03.013.

Telama, R., Yang, X., Viikari, J., Välimäki, I., Wanne, O & Raitakari, O. (2005). Physical activity from childhood to adulthood. A 21-year tracking study. *American Journal of Preventive Medicine, 28*, 267–273.

Tenorth, H.-E. & Tippelt, R. (Eds.). (2012). *Beltz Lexikon Pädagogik*. Weinheim: Beltz.

Thoonen, E., Sleegers, P., Peetsma, T. & Oort, F. (2011). Can teachers motivate students to learn? *Educational Studies, 37*, 345–360.

Tones, K. (2002). Health literacy: New wine in old bottles? *Health Educational Research, 17*(3), 287–290.

Twisk, J. W., Kemper, H. C. & Mechelen van, W. (2000). Tracking of activity and fitness and the relationship with cardiovascular disease risk factors. *Medicine & Science in Sports & Exercise, 32,* 1455–1461.

UNESCO (1978). *International Charter of Physical Education and Sport***.** portal.unesco.org/en/ev.php-URL_ID=13150&URL_DO=DO_TOPIC&URL.

Vasconcellos, F., Seabra, A., Katzmarzyk, P. T., Kraemer-Aguiar, L. G., Bouskela, E. & Farinatti, P. (2014). Physical activity in overweight and obese adolescents: Systematic review of the effects on physical fitness components and cardiovascular risk factors. *Sports Medicine*, *44*(8), 1139-1152. doi: 10.1007/s40279-014-0193-7.

Wang, Q., Ceci, S. J., Williams, W. M., & Kopko, K. A. (2004). Culturally situated cognitive competence: A functional framework. In R. J. Sternberg & E. Grigorenko (Eds.), *Culture and competence* (pp. 225–249). Washington, DC: American Psychological Association.

Weinert, F. E. (2001). Concept of competence: A conceptual clarification. In D. S. Rychen, & L. H. Salganik (Eds.), *Defining and selecting key competencies* (pp. 45–65). Seattle, WA: Hogrefe & Huber.

Whittemore, R., Chao, A., Popick, R. & Grey, M. (2013). School-based internet obesity prevention programs for adolescents: A systematic literature review. *The Yale Journal of Biology and Medicine*, *86*(1), 49–62.

WHO (1998). *WHO health promotion glossary.* Retrieved from http://whqlibdoc.who.int/hq/1998/WHO_HPR_HEP_98.1.pdf.

Zalesin, K. C., Franklin, B. A., Miller, W. M., Peterson, E. D. & McCullough, P. A. (2008). Impact of obesity on cardiovascular disease. *Endocrinology and Metabolism Clinics of North Amerca, 37*(3), 663–684.

Zarcadoolas, C., Pleasant, A., Greer, D. S. (2005). Understanding health literacy: An expanded model. *Health Promotion International, 20*, 195–203.

Zarcadoolas, C., Pleasant, A. F. & Greer, D. S. (2006). *Advancing health literacy: A framework for understanding and action*. San Francisco, CA: Jossey-Bass.

Zumstein, B. & Süss, F. (2006). Geschlechtergerechte Gesundheitsförderung als Qualitätskriterium für gesundheitsfördernde Schulen. In P. Kolip & T. Altgeld (Eds.), *Geschlechtergerechte Gesundheitsförderung und Prävention* (pp. 209–217). Weinheim, München: Juventa.

Michal Bronikowski

2.3 Physical Activity and Health

2.3.1 Introduction

Health is considered an individual resource but also, at the same time, a matter of public concern. This dichotomy divides the way people tend to think about their responsibilities for health. Nevertheless, only systemic solutions can be truly beneficial for all the parties involved. In order to raise the level of public health resources, various actions need to be undertaken which requires careful and aware planning, adjusted to state policy and emphasising long-term goals which would not be changed with each successive change of cabinets.

At first however, it requires a declaration on the general health policy. This concerns health from governmental decisions on the regulations of financing National Health Systems to the ways of dealing with healthy and unhealthy or ill members of society. The way the health system treats its patients maybe reflect either pathogenic (biological, clinical care) or salutogenic (sociological, wellness) approach. Obviously, this will be determined mostly by the funds available, but also by the level of social development and health awareness of a particular community. Presumably, the more economically developed a particular state (country) is, the more money can be invested into the national health system and spent on the search for new medical technologies and for better treatment procedures of its citizens. Although reality proves this is not always true.

But one may observe that recently there is good social climate for such changes in some places around the world. Devis (2009) says, "new concepts emerge like for example, 'new public health', 'health promotion', 'healthy cities', 'lifestyle' or 'ecological health'. They were added to a series of social practices, such as the consumption of whole meal products, the importance of natural medicine and mental health, as well as popularization of jogging or running magazines" (p. 74). This has been named as a "new social health consciousness" (Crawford, 1987).

In planning influencing changes of one's health-related behaviours a fundamental role has to be played by educational authorities, as this is probably the most systematic way (and despite the potential, temporary costs, still the cheapest one) to divert unhealthy social patterns of behaviour into healthy and active life styles. Kleiner (2009) says "to plan and realise health promotion in the school setting as a systemic concept means to look at the school's inner organization and its networking with other systems" (p. 34). Furthermore, Kleiner (2009) points out that the concept of health promotion should consider structural, organizational and social conditions of the school institutions to research health processes at school or the health-related teaching in PE class. Penny (2008) sees the subject could present itself as a key

component of the core educational agenda of tomorrow, with the argument, the great advantage of health and PE is that the very nature of its subject area carries opportunities to become a so-called "connective specialism" (see Figure 5).

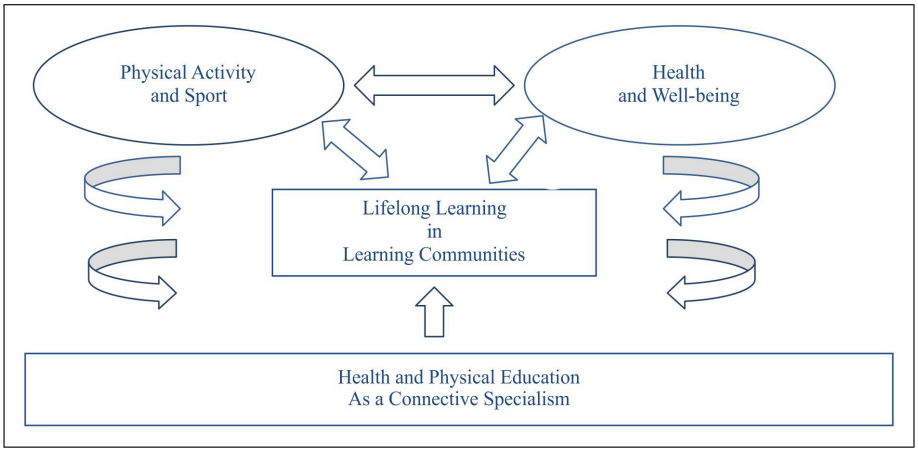


Figure 5: Health and Physical Education as a 'Connective Specialism' (Penny, 2008, p. 39)

School is an especially practical environment for introducing plans (innovations) directed at altering (or building up) health-related behaviours and habits. However, traditional approaches to teaching Physical Education in schools rely mainly on direct teaching methods, which tend to provide temporary physiological stimuli to the young organism but do not give students a sense of meaningfulness nor connect to the life outside a sport gym. Lack of sensibility observed by young people in their schooling process of Physical Education may influence the way they tend to organize their leisure time, both in their out-of-school time, and in their life beyond school education. The dissonance between aims of PE curricula and school reality makes matters even worse and culminates in the decreasing health condition of a young generation.

Today a potential threat to Physical Education is further reduction of time allocated for its obligatory classes worldwide (Hardman, 2011), although in some countries reforms of educational systems have been implemented. Governmental actions seem to align with the Global Forum for Physical Education Pedagogy (GoFPEP) consensus statement, such as accentuating the importance of cooperation of stakeholders in the community (teachers, administrators, parents, community members, business leaders) to advocate, promote, educate, and develop individuals to incorporate physical activity into their daily life through formal and informal education (Edginton, Chin, Geadelmann & Ahrabi-Fard, 2011). Physical Education curricula were also redesigned to promote active, student-centred learning and to empower individuals to develop life skills that lead to lifelong, self-directed engagement in physical activity (Bronikowski, 2014).

Current research-based evidence suggests that interventions in physical activity may be effective in the development of behaviours associated with healthy life style, if they are based on development of pattern-like programmes. Canada (2009) points at some reasons supporting this evidence, including compulsory schooling, school pedagogical structure and resources, the social function of school, and behavioural learning. However, the truth is that there are more reasons than just these ones. Schooling usually takes place from early childhood to the moment of entering adulthood, the most formative period in all aspects of human development – social, moral, cultural and biological – transforming an outer-dependent child into a self-regulated inner-dependent adult. So, at a practical level the imprints a child develops become a life-time internal programme of personal development.

Increasing social demand for life-skills education calls for finding the ways of transforming physical activity and health education into a "sustainable development" related subject. According to Lake, Stratton, Martin & Money (2001) "while active living by definition is concerned with the maintenance of activity behaviours across the life span, the addition of the word 'sustainable' serves to emphasise environmental influences on our physical activity behaviours as well as the environmental implications of those behaviours" (p. 474). If one wants to target the intervention in youth it is a reasonable move to involve local community institutions (municipality) to collaborate on providing extra-curricular programmes of activities. If so the outside-school organisations need to bear in mind the four elements of good collaboration: (1) understand the school system, (2) gain entrance into the school system, (3) work together with the school authorities and teachers, and (4) maintain the relationship (Ward, Saunders & Pate, 2007). But Smith and Biddle (2008) point out that whatever the intervention is going to be, it needs to be based on a solid theoretical framework based either on competencies (e.g., Bandura's Self-efficacy Theory), attitudes (e. g., Ajzen's Theory of Planned Behaviour) or motivation (e. g., Deci and Ryan's Self-determination Theory).

2.3.2 "State of art" on Interventions in Health-enhancing Programmes

Social demand for health promotion programmes is the result of declining average health conditions which result in heavy economic costs to national funds across many countries. It is also important to mention other consequences (moral, social, cultural) which are more difficult to quantify but the outcomes of which are very often extremely costly for society in the long run. Nevertheless, it is the decreased level of an individual's health which has to be within the scope of the health sector (also physical activity sector) provided by the state and other contributors. If there were enough sport centres, more people could spend their leisure time actively. Shortage in provision of such places, as well as lack of organised healthcare or preventative health systems leaves each person to their own devices. It reflects the policy suggesting that

you get as much health as you can provide for yourself, at your own costs, according to your own level of awareness and within the opportunities created by yourself.

One of the most dangerous predicaments of potential health problems is overweight and obesity in youth, which frequently are associated with relevant health problems in the future. In the HELLENA cross-sectional study, overweight prevalence was 19.5% in boys and 16.3% in girls. Obesity prevalence was 7.6% in boys and 4.4% in girls in an overall European perspective. Although the study was standardised, with a methodology enabling reliable and comparable data collection, the findings have to be treated with caution. Clearly, it is difficult to estimate exact overweight and obesity in youth because of the gender factors differentiating individuals, especially at the period of puberty (Moreno & Molnar, 2009). Young people's sedentary behaviours (and generally inactive lifestyle) are related to an increase in technological media usage in their leisure time as part of the youth culture in developed countries. On the other hand, some exhaustive meta-analysis finds little evidence to confirm relationships among time devoted to technology media usage, physical inactivity and obesity. These analyses show weak relationships and little clinical importance (Marshall, Biddle, Gorely, Cameron & Murdey, 2004).

Other research findings also corroborate the meta-analysis by showing that TV watching does not correlate with physical inactivity and use of technological media does not substitute involvement in exercising. One of the recent longitudinal studies indicates that TV watching and leisure-time physical activity are separate, but not opposed constructs (Taveras et al., 2007) or that some adolescents can have a reasonable amount of activity time and still spend quite a long time watching TV (Biddle, Gorely, Marshall, Murdy & Cameron, 2003). An analysis of research-based physical activity interventions show that Physical Education interventions were among the more effective approaches (Centres for Disease Control and Prevention, 2001). Also Dobbins, deCorby, Robeson, Husson & Tirilis, 2009) in their report on evaluation of effectiveness of physical activity intervention studies conclude that there is good evidence that school-based physical activity interventions have a positive impact on some selected items (mainly increasing physical activity and VO2max reducing television viewing and blood cholesterol), although no effects were observed on leisure-time physical activity rates, systolic and diastolic bold pressure, body mass index, and pulse rate. According to the authors of this analysis at a minimum, a combination of printed educational materials and changes to the school curriculum that promote physical activity result in positive effects. Gawel (2010) points out that an "access of school in creating students' health is a result of the fact that the period of childhood and adolescence is largely influenced by an organized educational system. Therefore, the school's responsibility is to plan and implement didactical and educational processes to promote general values and health constitute one of such values" (p. 103).

Research into the Health Behaviour in School-aged Children (HBSC) indicates that the students who feel more positive in their psycho-social environment of school gain better results, do not feel overburdened with school-work, experience positive

peer support and do not complain very often about various ailments (headaches, depression, irritation, anxiety, insomnia etc.) and infrequently undertake actions connected with health hazards (Woynarowska, Mazur, Kołoło & Małkowska, 2005). But the question remains as to how schools are going to organize such healthy behaviours in a systematic way?

2.3.3 Effectiveness of health-enhancing Interventions

In their book "Physical Activity Interventions in Children and Adolescents" Ward et al. (2007) divided interventions concerning physical activity and health into (1) school-based interventions, (2) community interventions, and (3) family-based interventions in home and health care settings. Research-based studies show that the most effective school-based interventions concentrate on: (a) quality physical education programmes (enhancements of existing physical education programmes); (b) physical education-only interventions (interventions that increase the amount of enjoyment of physical education classes); (c) physical activity in the classroom (interventions that add an activity component to the academic classroom); or (d) comprehensive or coordinated interventions (interventions that use a number of school components to increase physical activity in youth) (Ward et al., 2007).

Among interventions evaluated by the authors was the SPARK programme: Sports, Play, and Active Recreation for Kids – including 10 health-related activity units and nine sport units and taught self-management skills (self-monitoring, goal setting, stimulus control, self-reinforcement, self-instruction and problem solving). The activities were designed to provide Moderate-to-Vigorous Physical Activity (MVPA) at least three days per week for 30 minutes to fourth and fifth grade students. The follow-up study has demonstrated sustainability proving the programme to be effective in building positive and long-term attitudes toward physical activity.

In M-SPAN (Middle School Physical Activity and Nutrition) programme a major component was an enhanced physical education programme including curricular materials as well as staff development. Teachers designed and implemented an active curriculum, improvements in classroom management and organizational strategies for activities. After a two-year period of implementation, MVPA in physical education class increased by 18% of the total lesson time. TAKE 10 programme was a classroom-based physical activity programme for elementary schools integrating physical activity and nutrition concepts with grade-specific academic lessons in language, arts, maths, social studies, science, nutrition, health and character education. This was based on creating 10 minutes of activity instructional time on a daily basis. Physical activity levels of the children increased, and a majority of teachers (75%) were able to use the materials on most days of the week. It was treated as a supplementary to the amount of regular physical education classes.

Another programme "Go for Health" was based on organizational change and social cognitive theories, to increase healthy eating and physical activity. It concerned third/fourth grade students and aimed to reduce sodium, fat and saturated fat in school lunches and to increase the amount of time children were physically active in physical education. A new curriculum was designed to develop students' knowledge, skills, behavioural capability, confidence, and positive expectations related to physical activity through health instruction. Two semester-long units, six to eight weeks each emphasised having fun in physical activity. The health education curriculum consisted of two four-week modules on healthy eating and one six-week module about physical activity. The programme also included the school cafeteria (modification of menu planning, food preparation and creating healthy needs in purchasing). Positive outcomes have been reported for self-efficacy, children felt more confident about their ability to change their behaviour concerning health (decline in salt intake, participation in aerobic physical activity etc.).

Yet another programme "Eat Well and Keep Moving" was based on social cognitive theory, social marketing and behaviour choice theory. Designed by a research group from Harvard aimed at the promotion of physical and nutrition education of fourth and fifth grade students with special emphasis on eating more fruit and vegetables and less fat, with more physical activity. The intervention had six interlinked components: classroom education, food service, physical education, staff wellness, parental involvement and school-wide promotional campaigns that were designed both to create a supportive learning environment and to work with existing school resources and curricula. The physical education component reinforced messages received in the classroom by using lessons plans that integrated physical activity and nutrition. Results of the programme indicated that children's diets improved, particularly with regard to an increase in vitamin C and consumption of fruit and vegetables, because the children were able to make changes in their own behaviour. It is interesting though that those levels of physical activity were not significantly improved over the course of the study. However, all the schools targeted had little physical education time and few after-school programmes, which likely contributed to the limitations of increasing this factor (Ward et al., 2007).

There are two more projects that I would like to describe in detail. In 2005 an intervention called "Do it Yourself – Choose Health", aimed at increasing out-of-school involvement in physical activity among youth was introduced to selected gymnasium schools in Poznań, Poland. An experimental programme included 379 boys and girls, aged 13 and was aimed at increasing their involvement and responsibility in creating health-related physically active lifestyle (Bronikowski, 2008). The theoretical framework was based on Hellison's (2003) "Teaching Responsibility through Physical Activity" (TRPA). Hellison's model aims to develop one's sense of responsibility through the following levels: (1) irresponsibility, (2) self-control, (3) involvement, (4) self-responsibility, and (5) caring, where goals are organized into a step-by-step progression of attitudes and behaviours. To achieve development through these levels

Hellison (2003) suggests using the following teaching strategies: Teacher talk, modelling, reinforcement, reflection time, student sharing and other specific strategies (for example students contracts may help students operate at the level involvement and reciprocal teaching, whereby students pair up and teach each other, may help students to operate at the level of self-responsibility).

These strategies were introduced into the teaching programme for experimental groups. The interventional programme was run over 15 months (3 school semesters). A specially self-designed, personalised planner "Planning Form of Leisure-time Physical Activity" was used for self-programming of out-of-school schedule of physical activity. In that planner, every student planned the amount of time and forms of weekly physical activity hours they voluntarily committed to undertake during their out-of-school leisure-time for each two-week period. The list of activities was provided with an indication whether that particular activity was conducted at low, moderate or of vigorous intensity. The students were setting their goals for PA, with self-monitoring of the progress towards goals, and PE teachers built social support with reinforcement through reward and positive talk system. The same procedure was maintained throughout the three school semesters of the intervention period. Following the completion of the physical education lessons, short meetings were held every two weeks to evaluate the leisure-time activities (carried out by the teacher and the student together) for the concordance of the planned, and realised PA. The experimental students were given the responsibility for the accuracy of the plans and its accomplishments as a part of Hellison's model of TRPA. Those students who fulfilled the obligations to undertake PA in the way they had committed themselves in the planner received a reward–an extra top grade once every two weeks. Control groups did not have this system of reinforcement. They had traditional PE lessons without any extension to their out-of-school time procedure.

Mean results in pre-tests showed no statistical differences between groups and were distributed between 25-75th percentiles according to age-related population-wide norms (Stupnicki, Przewęda & Milde, 2003). In post-test examination the differences were significant and in favour of the experimental group in most of the tests, which improved to the level of 50-75th percentile, whereas they did not change significantly in control groups (see Table 2).

Table 2: Comparison of post-test results in Eurofit test both in experimental and control 14-15 year old boys and girls in Poland

Fitness test	Boys		Girls	
	Experimental	Control	Experimental	Control
Flamingo balance (number)	10.9±4.9**	13.0±5.7	10.6±4.9**	15.0±8.3
Plate tapping (s)	12.1±1.9	12.3±1.7	12.5±2.1	12.9±2.0
Sit and reach (cm)	18.1±7.8	15.9±7.6	21.9±8.7	20.5±8.0
Standing broad jump (cm)	193.9±20.8**	184.7±24.7	161.5±21.4**	149.9±20.5
Hand grip (kg)	34.3±8.2	32.7±8.9	28.3±7.1**	23.9±6.2
Sit-ups (number/30s)	27.7±5.1**	25.6±4.2	23.7±5.7**	21.4±4.0
Bend arm hang (s)	9.4±8.2**	5.7±7.0	8.5±9.7**	3.1±5.1
Shuttle run 10x5m (s)	18.8±2.1**	20.0±2.2	20.9±2.5**	22.3±2.3
20m endurance shuttle run (min)	7.5±2.0**	6.2±2.4	5.5±1.7**	4.1±1.4

** Significant difference at p<0.01, test *t*)

Overall positive effects were also noticed at post-tests in an increased frequency of out-of-school physical activity (up to 5 times a week) (see Figure 6), which was also maintained in experimental groups till the end of the three-year period of secondary school, at the age of 16. This has led to significant improvements in physical fitness (between 50th and 75th percentiles), as well as in health awareness. Also increased self-responsibility was observed in experimental groups of boys and girls.

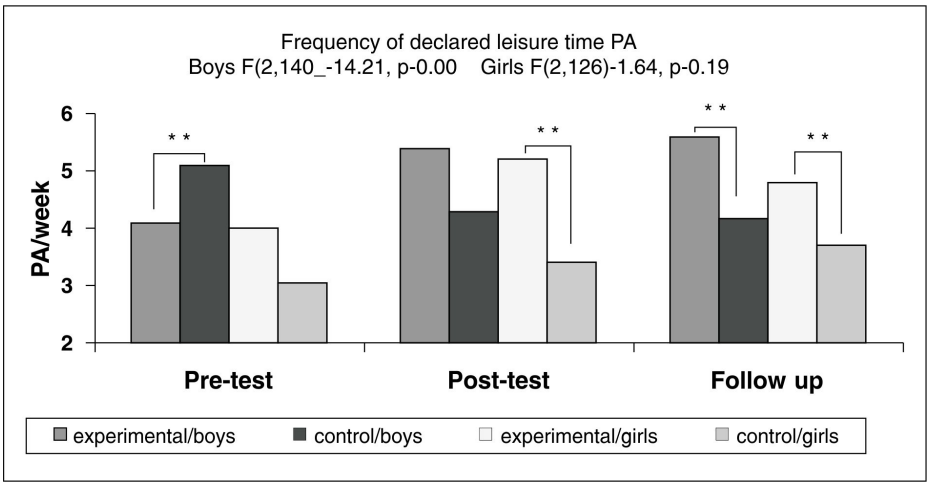


Figure 6: Pre-test, post-test and follow-up changes in frequency of weekly out-of-school physical activity of 13-16 year old youth

In 2010 a six month school intervention was introduced into the education of primary school children aged 7-9 years old in Poznan, Poland. The project was a consequence of an earlier German-Dutch project "gkgk", later turned into "Healthy children in sound communities" (EU Grant – EAC/21/2009/033 – www.hcsc.eu), with partners from Germany, Italy, Great Britain, Czech Republic and Holland. This intervention included providing physical activity 5 times a week to primary (7-9 years old) school children. Three of these lessons were supposed to be carried out by a school teacher of each particular class, and 2 classes of physical activities were led by a qualified sport specialist from a local youth sport club. Experimental classes taking part in the interventional programme also had an extra class on healthy diet, conducted by a qualified nutritionist. The parents were also included in the project and they had 3 lectures of healthy life style of young children presented by a physical activity expert and a nutrition specialist from the university. This was developed to strengthen the ties with local community settings. The ethos surrounding the project was based on the idea of 'round table' meetings which gathered local partners from the school authority (headmaster, selected teachers and a nurse), the municipality (heads of health and education departments), academic centres (teams of academics from Department of Methodology of Physical Education teaching and Department of Hygiene), as well as representatives of local youth sport club (coaches). During the project some measurements were taken including fitness testing and some awareness testing questionnaires were distributed to parents. A pre-test post-test comparison of effects was carried out.

A comparison of BMI distribution among students from countries participating in the project shows that on average 17.6% of 7-9 year old children were overweight or obese, but a closer analysis indicated differences between each country, which were established as being due to the socio-demographic factors (like large populations of children of Muslin or Turkish origin for example in some countries). The highest percentage of children above the 90 percentile cut-off point was found in Italy (26.5%) whereas in Czech Republic there were a low number of overweight children (10.3%).

Some results in fitness testing from pre-test/post-test examinations have been presented in table 3. There is a large difference between the best (maximal results) and those students who have scored the lowest (minimal results), especially in the 6-minute endurance run. A big discrepancy is also visible in the standing broad jump, sit and reach and the number of sit-ups, where the experimental group has increased whereas control group has decreased.

Table 3: Results of 7-9 year old experimental and control students in fitness tests in Poland.

	Scores in fitness test in Polish children aged 7-9 pre-test/post-test design									
	20-metre sprint (sec)		**6 min endurance run (m)**		**Standing broad jump (cm)**		**Sit ups (number/ 30sec)**		**Sit and reach (cm)**	
	Pre-test	**Post-test**	**Pre-test**	**Post-test**	**Pre-test**	**Post-test**	**Pre-test**	**Post-test**	**Pre-test**	**Post-test**
Experimental	**4.7**	**4.8**	**862.0**	**838.0**	**113.0**	**98.0**	**19.8**	**27.0**	**14.8**	**15.6**
Min	6.3	7.1	594.0	486.0	70.0	50.0	10.0	10.0	-3.0	1.0
Max	3.6	3.7	1134.0	1080.0	177	165	32.0	42.0	30.5	32.0
SD	0.51	0.60	123.7	123.7	0.24	0.21	5.07	6.42	6.49	7.03
Control	**4.5**	**4.7**	**858.4**	**813.7**	**112.0**	**98.0**	**20.2**	**24.4**	**14.4**	**13.9**
Min	5.9	5.8	594.0	378.0	79	63	8.0	12.0	6.0	4.0
Max	3.7	4.0	1053.0	1026.0	1.59	1.53	30.0	34.0	26.0	27.0
SD	0.42	0.37	112.5	118.4	0.17	0.20	4.19	4.21	4.90	5.31

The results show that despite the 2 extra-curricular physical activity lessons the differences in Polish children were low, insignificant and even sometimes there was no progress. This could be explained by a bias factor of expectations but on the other hand it seems that the use of plays and games might not have been sufficient to cause significant progress, beyond only a slight development of the motor abilities included in testing although development of flexibility needs to be seen as a big achievement. Perhaps to achieve a significant progress in other fitness items some more exercising time focussed on endurance, lower limb strength or speed would be required, but there were doubts about whether this was really what physical education initiation should have been about. There are also other conclusions from the intervention. It is worth mentioning that some children could not run the whole 6 minute endurance run, stopping on the way, walking or even leaving the track after only running 200-300 meters, without any will to continue. During the tests the research team also looked at the development and level of coordination abilities. It was particularly obvious during the standing broad jump whether a student landed on both feet, kept balance or leant forward/backward. And it was established that most of the 7 year old students had difficulties landing on both feet, whereas 8 and 9 year olds had no problems and managed to keep their balance at landing.

Nevertheless, the abovementioned description of strategies in providing interventions aimed at increasing levels of physical activity give professionals in that field a full scope of what can be done and how.

2.3.4 Conclusions

Designers of new school curricula need to address the problem of what can possibly make physical education (and health) a sustainable subject? Would preparation for life-long sports (as an outcome of Physical Education) serve as an impetus and would the freedom to choose one's own favourite sports provide the so-demanded sustainability of each individual? Or may it be the health education itself, practice enhanced with some interesting theory? And perhaps experience-based learning could be one of the options available (in schools and in community-based settings). However, Hardman (2011) points at the persistence in many nations of relatively restricted conceptions of Physical Education which continue to emphasise traditional competitive sports and achievement oriented approaches to pedagogy and participation. There are also other problems indicated such as: (1) the relevance and quality of the Physical Education curriculum, especially where there is a sustained pre-disposition towards sports competition and performance-related activities dominated by Games, Gymnastics and Track and Field Athletics; (2) barriers to full gender and disability inclusion, and (3) the failure of society to attach value to school Physical Education and sport. Thus, combining the long-term objectives of Physical Education with health education aims and use of interactive forms of teaching and learning may create a chance for making these areas more attractive once again. As Penny (2008) says, make it a 'connective specialism'.

It seems that it may be less expensive and yet more effective to run intervention aimed at increasing physical activity of youth based on self-planned out-of-school leisure time physical activity. It has been proven that students' involvement in planning and evaluating their level of activity increases engagement and motivation as well as health-awareness. Gaweł (2010) points at the importance of a positive school psycho-social environment in shaping of students' life skills, especially interpersonal skills, as well as the ability to cope with stress and building a positive self-image. To provide such a positive environment, school authorities need to control the most important factors: (a) educational impingements which are directed at protection and promotion of the students' health; (b) material environment of school related to health; (c) psychosocial environment of school, and (d) patterns of health behaviours, which are presented at school. Potential interrelations between school education, health and other aspects are presented in the diagram below (see Figure 7).

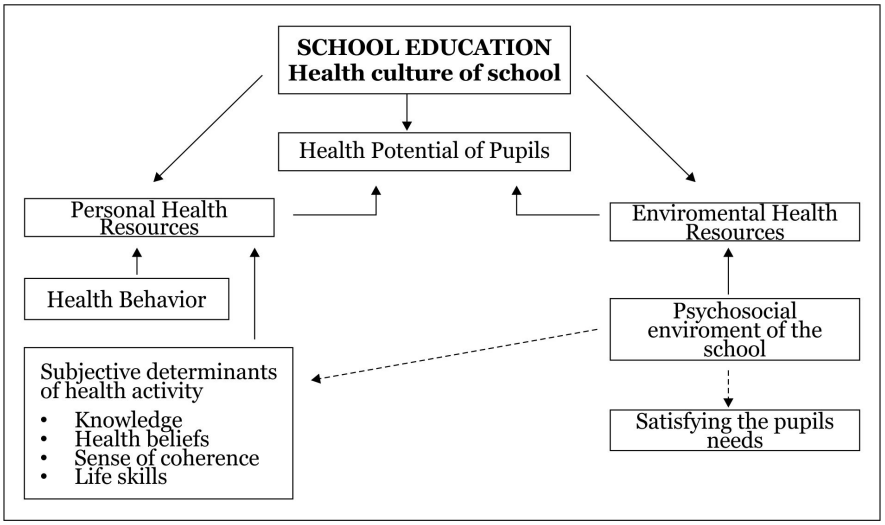


Figure 7: Health aspects of school education (Gaweł, 2010, p.108)

Better understanding of determinants of youth activity can help in developing effective intervention programmes of sustainable activity from childhood into active adulthood and thus minimize the risk of developing sedentary lifestyle behaviour patterns. The challenge for educators is to develop and successfully implement interventions that actually make those changes last. They should be based on interactive experienced-based teaching at school and on setting approaches in community-based life. Some argue to shift physical education away from an activity-based approach toward a theme-based curriculum reflecting the dilemmas and new issues that society faces (Penny & Chandler, 2000). They propose the following areas in this theme-based curriculum approach.

Movement and physical literacy – focuses upon the knowledge, skills and understanding that are associated with bodily awareness, development and expression and that underpin participation, development of performance and enjoyment in and of the wide array of physical activities that feature in modern societies.

1. Physical activity, health and fitness – centres upon the relationships between participation in physical activity and the health and well-being of individuals and societies. This theme therefore addresses the ways in which different physical activities can facilitate, but also in some forms and at some times may place at risk, physical, psychological and social well-being throughout one's life.
2. Competition and cooperation – addresses what may regard as defining characteristics of participation and performance in a number of physical activities and particularly in organized sports. In seeking to develop knowledge and understanding of competition and cooperation, it may be useful to include activities that students are less familiar with and that demand different patterns of play, communication and teamwork.

3. Challenge – multidisciplinary nature of teaching and learning point to the need for physical educationalists to be addressing the psychological and social challenges, as well as the physical challenges, associated with and arising in the context of participation and performance in physical activity. There is the potential linkage of the theme challenge to a wide array of physical activities and environments.

Only such a versatile and subjective approach to a young individual may result in shaping his/her permanent readiness to health behaviour even without immediate systematic strengthening. It looks as though it may be a good idea to look for new programming solutions and analyse "the cost-benefits" of in- and out-of-school interventional programmes conducted in various educational systems and socio-cultural environments (Kahn et al., 2002). However, eventually it will be the physical and health education teachers and professionals who become empowered to set new patterns and new practices concerning healthy life styles of students, thus setting new directions for a healthier future society.

References

Biddle, S. J. H., Gorely, T., Marshall, S. J., Murdy, I. & Cameron, N. (2003). Physical activity and sedentary behaviours in youth: Issues and controversies. *Journal of the Royal Society for the Promotion of Health, 124*(1), 29–33.

Bronikowski, M. (2008). *Postawy prosomatyczne młodzieży gimnazjalnej jako efekt interwencji edukacyjnej w procesie wychowania fizycznego.* AWF Poznań Press, Poland.

Bronikowski, M. (2014). Where is Physical Education and health heading in Poland? In C. Mink-Kai & C. Edginton (Eds.). (2014). *Physical Education and health: Global perspectives and best practice* (pp. 327–337). Urbana: Sagemore.

Canada, D. L. (2009). Health education in the school and in Physical Education. A cross curricular approach from the Healthaware project. In M. Gonzalez-Gross, D. Canada, J. Valtuena, U. Albers & P. J. Benito (Eds.), *Physical activity and health education in European schools* (pp. 48–52). Universidad Politecnica de Madrid: Reprografia Doppel.

Centers for Disease Control and Prevention (2001). Increasing physical activity. A report on the Task Force on Community Preventive Services. *MMWR Recommendations and Reports, 53*(SS–2), 1–96.

Crawford, R. (1987). Cultural influence on prevention and the emergence of a new health consciousness. In N. D. Weinstein (Ed.), *Taking care: Understanding and encouraging self-protective behaviours* (pp. 95–113). Cambridge: Cambridge University Press.

Devis, D. J. (2009). Health paradigm in Physical Education. In M. Gonzalez-Gross, D. Canada, J. Valtuena, U. Albers & P. J. Benito (Eds.), *Physical activity and health education in European schools* (pp. 74–79). Universidad Politecnica de Madrid: Reprografia Doppel.

Dobbins, M., Corby de, K., Robeson, P., Husson, H. & Tirilis, D. (2009). *School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6–18.* Retrieved from Cochrane Database Sys Rev, 1:CD007651.

Edginton, C. R., Chin, M.-K., Geadelmann, P. & Ahrabi-Fard, I. (2011). Global Forum for Physical Education Pedagogy 2010: Health and physical education pedagogy in the 21st century. A statement of consensus. *International Journal of Physical Education, 48*(2), 33–41.

Gaweł, A. (2010). Health dimension of school education. *European Journal of Physical and Health Education, 4*(2), 103–109.

Hardman, K. (2011). Global issues in the situation of Physical Education in schools. In K. Hardman & K. Green (Eds.), *Contemporary issues in Physical Education* (pp.11–30). Aachen: Meyer & Meyer.

Hellison, D. (2003). *Teaching responsibility through physical activity*. Champaign, IL: Human Kinetics.

Kahn, B. E., Ramsey, L. T., Brownson, R. C., Heath, G. W., Howze, E. H., Powel, K. E., ...Task Force on Community Preventive Services. (2002). The effectiveness of interventions to increase physical activity. A systematic review. *American Journal of Preventive Medicine 22*(4th Suppl.), 73–107.

Kleiner, K. (2009). Building health through health promotion: The Health(a)ware project as a chance. Framework of the project. In M. Gonzalez-Gross, D. Canada, J. Valtuena, U. Albers & P.J. Benito (Eds.), *Physical activity and health education in European schools* (pp. 34–39). Universidad Politecnica de Madrid: Reprografia Doppel.

Lake, J., Stratton, G., Martin, D. & Money, M. (2001). Physical Education and sustainable development: An unrodden path. *Quest, 53*, 471–482.

Marshall, S. J., Biddle, S. J. H., Gorely, T., Cameron, N. & Murdey, I. (2004). Relationships between media use, body fatness and physical activity in children and youth: A meta-analysis. *International Journal of Obesity, 28,* 1238–1246.

Moreno, L. A. & Molnar, D. (2009). Obesity prevalence in European adolescents. In M. Gonzalez-Gross, D. Canada, J. Valtuena, U. Albers & P.J. Benito (Eds.), *Physical activity and health Education in European Schools* (pp. 72–73). Universidad Politecnica de Madrid: Reprografia Doppel.

Penny, D. (2008). Playing a political game and playing for position. Policy and curriculum development in health and Physical Education. *European Physical Education Review, 14*(1), 33–39.

Penny, D. & Chandler, T. (2000) Physical education: What future(s)? *Sport, Education and Society*, *5*(1), 71–87.

Smith, A. L. & Biddle, S. J. H. (2008). *Youth physical activity and sedentary behavior. Challenges and solutions*. Champaign, Il.: Human Kinetics.

Stupnicki, R, Przewęda, R. & Milde, K. (2003). *Centylowe siatki sprawności fizycznej polskiej młodzieży wg testów Eurofit. Studia i. Monografie no 91.* AWF Warszawa. Poland.

Taveras, E. M., Field, A. E., Berkey, C. S., Rifas-Shiman, S. L., Frazier, A. L., Colditz, G. A. & Gillman, M.W. (2007). Longitudinal relationship between television viewing and leisure-time physical activity during adolescence. *Pediatrics, 119,* 314–319.

Ward, D. S., Saunders, R. P. & Pate, R. R. (2007). *Physical activity interventions in children and adolescents.* Champaign, Il.: Human Kinetics.

Woynarowska, B., Mazur, J., Kołoło, H. & Małkowska, A. (2005). *Zdrowie, zachowania zdrowotne i środowisko społeczne młodzieży w krajach Unii Europejskiej. Warszawa, Katedra Biometrycznych Podstaw Rozwoju i Wychowania, Wydział Pedagogiczny Uniwersytetu Warszawskiego.* Zakład Epidemiologii Instytutu Matki i Dziecka, Poland.

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2.4 Didactical Concept and Methodology

This chapter deals with issues surrounding the didactic implementation of health-promoting actions in the school setting. Three thematic emphases will form the core of the exposition:

1. What are the key elements of the concept of "Didactics of health promotion in a scholastic setting", what are the cornerstones of the model and in what ways does it differ from other sport-didactic drafts?
2. Which didactic interventions are necessary in school and specific subjects in order to improve the quality of health promotion and how does the Health(a)ware project contribute to it?
3. How are health-promoting issues realised in practice in a didactic and effective way and how can teachers be supported?

2.4.1 Introduction

Without involving school sports and the subject Physical Education, the implementation of health-promoting initiatives in the school setting is neither conceivable nor can it be successful.

The Health(a)ware project combines the core concepts of health promotion, participation and empowerment in the school setting. Health(a)ware aims to emphasise that health education and promotion can only be successful if it is implemented in the school setting as a continuous process. Studies show that students' subjective understanding of health, exercise and sports differs according to their respective cultural background (Lohaus & Ball, 2006).

Concerning students´ lifestyles, the following questions need to be considered: How much physical activity is ideal? What does it mean to keep a healthy diet? How can health-promoting habits be acquired and health resources built up? And: What is well-being? Our approach uses these questions to positively and enduringly influence and improve school-related health education and promotion. The aim is to support teachers and other professionals associated with the education of young people in recognising health-promoting topics in everyday teaching and to supply them with exemplary concepts ("best practice lessons") of health-promoting topics for the school setting (Broesskamp-Stone, 2008). Thus, with regard to educational policy and society, health promotion will assume its position in the curriculum of the respective subject. Only when the importance of health and its school-related promotion is taken seriously by students, parents, teachers and others, can health have an

effectual role in a vibrant culture of health promotion at school and in classes. This is the perspective from which the project Health(a)ware operates.

2.4.2 Didactical Framework

Teaching and educating in the school-system is done with the pedagogical aim of educating children and adolescents to study effectively. The implementation of health-related pedagogical concepts belongs to the domain of didactics (Benner, 2001; Diederich, 1988; Lenzen, 1997; Meusel, 1976; Terhart, 2009). General didactics–especially teaching methodology in "Exercise and Sports" – can, therefore, be referred to as the professional science of teachers and, especially, teachers of Physical Education (Jank & Meyer, 2001). In our definition, sport didactics is a consistent sport-scientific discipline that integrates both theoretical models and empirical findings within the scope of teaching and education. As a teaching methodology, it can be linked with other scientific disciplines (e.g., health sciences, biology, psychology), while as a sub-discipline of sport science it constitutes the theory and practice of teaching and learning of selected and specific motion-oriented exercises (e.g., artistic gymnastics, playing games, swimming) and interdisciplinary topics (e.g. health promotion) by using differentiated methodological ways of instruction and communication. Physical exercise, playing games and sports thus form a part of education and teaching within and outside the domain of school.

Against this background the didactics of health promotion becomes a basis for acquainting children and adolescents with the individual and social resources of a healthy lifestyle. This seems to be a primary aim, as international comparative studies on the topics of health consciousness and healthy habits reveal that students do not get adequate opportunity to acquire a competence profile of health knowledge and health behaviour (Dür, 2008; Lohaus & Ball, 2006; Stewart-Brown, 2006). These deficits are taken up by the didactics of school-related health promotion and promoted in our approach. Didactics of health promotion are able to contribute to general improvement of children's and adolescents' state of health.

Before discussing the "Didactics of Health Promotion in the School Setting", the implications of this term need to be clarified. What are the cornerstones of such a didactic model?

The didactic model of health promotion is a theoretical draft that explains requirements, capabilities, consequences and limits of teaching and learning of a healthy lifestyle and health-promoting principles and behaviour. The subject matter of health-promoting didactics is health as a construct of a certain teaching and learning environment at school, which is integrated in all subjects at all levels. In the case of our didactical approach the focus is on PE and possibly related to other subjects. Our approach of health promotion is based on the theoretical concept of

salutogenesis and describes the scope within which health promoting initiatives and its maintenance and reinforcement can be justified and conveyed in a structured way.

This scope of didactics of health promotion comprises: (1) Decisions about general and special aims of health promotion, (2) contents and topics of teaching and learning that are based on certain aims, (3) methods, procedures and different types of social interaction in lessons, (4) media and material used to represent topics and, finally, (5) mechanisms of control and feedback to ensure effective teaching and learning and to enhance its quality. These elements are a mere representative sample of the cornerstones of didactics of health promotion. They form the basis for the teaching examples given in this book. Against this background, the importance of didactics of school-related health promotion and for the organisation of PE classes will be described in more detail following.

Health-promoting patterns of behaviour form the basis for developing and strengthening health resources. Children and adolescents can best be supported and lead to regular physical activity and a healthy lifestyle at places where they are easily accessed. Schools in particular, but also public institutions, such as sports clubs, provide this opportunity. Health(a)ware's understanding of health promotion is based on "sports in a broader sense", which can primarily be described by the terms exercise and physical activity. Rather than principles of performance, competition and comparison being dominant, the focus is on perspectives and tendencies, such as, compensation for sitting and studying, games, excitement, social co-operation, communication, awareness, experience and expression (Kurz, 1977).

Initiatives in health promotion are confronted with an important challenge: Their aim is to reinforce children and adolescents to transfer the knowledge and patterns of behaviour learned at school to their everyday life. We deliver a drafted concept for the subject area of health promotion. Teachers are supported to implement the contents of their curricula. As stated above, some approaches to an individual subject of "Health Promotion" aim to convey and promote relevant health matters and can be found in various European school systems. However, in our approach we follow a different track and rather than supporting notions of establishing an individual subject we strive for the integration of health education and promotion actions into PE class and related subjects. Taking interdisciplinary education, project-based teaching, and subject-specific teaching as examples, we demonstrate how teaching could be organized and contents structured in order to apply health education and promotion in the school setting.

Health education and health promotion mean that students are made aware of health issues and experience examples of a healthy lifestyle. In order to offer health education and health promotion of high quality and to render it effective, it has to be part of an institutionally-embedded education that is systematic and goal-oriented, offers variety in content, and is conducted in a pedagogically-organized environment.

Learning in the spectrum of health education and health promotion can be supported by the following didactic principles:

- *Health promotion as a long-term learning process.* School-related health promotion is particularly successful when it is designed and planned as part of the regular school day over a fairly long time-span. It is hardly possible for students to develop health consciousness through short-term initiatives and occasional activities.
- *Building on previous knowledge.* Learning is only possible when the topics, aims and contents of health education and health promotion are tailored for the individual. In order to approach the topic it is necessary to find out what kind of information students already have.
- *Considering previous experience.* In order to be targeted it is necessary for health promotion to consider and discuss the kind of health experiences children and adolescents have made so far.
- *Selecting aims, contents and topics.* The purpose of health education and health promotion is to enhance children's and young adults' physical, psychological and social potential for building-up health resources. The topic "Health" should be taught in a didactically differentiated way, with regard to the school's own curricula and children's and adolescents' everyday life.
- *Interlinking selected topics, contents and aims.* Children and adolescents have to be acquainted with different fields of exercise (e.g., recreational sport), and health-related issues (e.g. nutrition, smoking, alcohol consumption, noise, posture, stress) should be discussed in regard to other subjects, which should likewise deal with health-related issues.

According to the interdisciplinary and inter-cultural approach of the Health(a)ware project the didactical framework comprises various topics to educate health and the design of a lesson plan arranging a series of health promotion actions by using different organizational and didactic methods.

2.4.3 Teaching Types

The following chapter focuses on the temporal organisation of lessons. Lessons can be organised in three different ways:

- *Single subjects* like PE, Biology, Arts or Mathematics. In the case of Health(a)ware we only focus on PE class.
- The term *cross-subject teaching* is used, when a specific health topic is, for instance, educated in PE, Biology and Physics class.
- *Health projects* can be conducted in PE class or in co-operation with other subjects.

In order to render health-promoting teaching successful, irrespective of the form of organization, teachers have to make a range of decisions: They have to clarify what

prerequisites for a health-promoting education students already have and what the sport-pedagogical intentions are, define the topic of the unit, select methods, select an organisational structure, plan the form of interaction and relations, select material and equipment and check security features.

The management of the structural features of health-promotion teaching is displayed in figure 8. The illustration demonstrates that teachers have the necessary competency to choose selected health-promotion topics according to the situational condition at hand and to arrange them with regard to the target group. The "Didactic Hexagon" as a basis of conditions, on which decisions are formed, is constituted by aim structure, content structure, room structure, time structure, relation and social structure and action structure (Meyer, 2003).

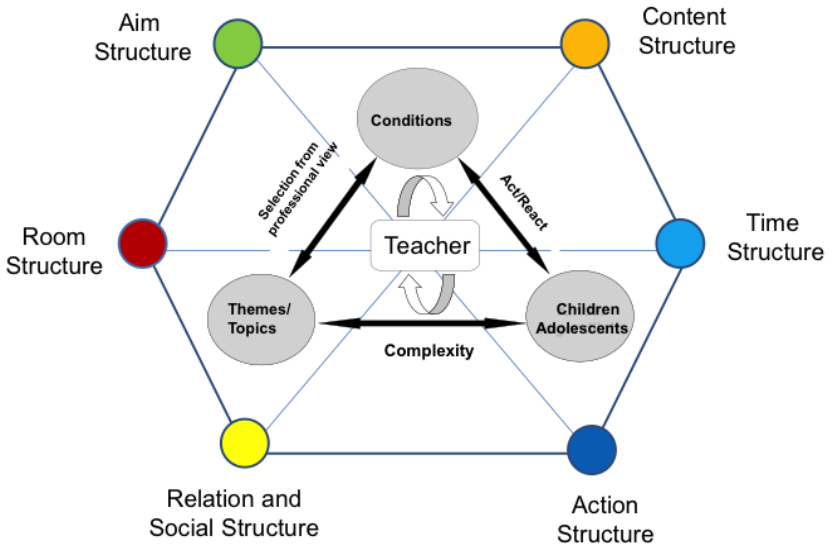


Figure 8: Management of structural features of lessons

2.4.3.1 Physical Education Class

PE class is a subject-specific type of course, which means that aims and contents of a single subject are taken into consideration. The focus of teaching and learning together is on this single subject and its contents.

According to our approach PE should be taught in a way that complements the subject-specific curricular guidelines with health-promoting topics (aims and contents) related to the students' experience (Schierz, 1997). The traditional elements of PE (e.g., games, athletics, hiking, cycling, badminton or swimming) should be broadened by adding trend sports (e.g. climbing, mountain biking, yoga, hip-hop dancing)

and grouped according to topics that are important in health promotion (e.g., posture) and with regard to different target groups.

2.4.3.2 Cross-Subject Teaching

When education spreads across the boundaries of a specific subject, to include other topics (such as health-promotion), and combines learning processes, it is called "Cross-Subject Teaching". It comprises concepts of teaching and learning that interweave topics that are usually dealt with separately in different courses in a didactically and methodical way (Huber, Kroeger & Schülert, 1996; Moegling, 1998; Peterßen, 2000a). If health is seen as a multidimensional phenomenon which includes physical, emotional, cognitive and social aspects, the organisational form of cross-subject teaching is particularly suitable for dealing with health-promoting topics in a complex and cross-linked way. It offers the appropriate place for reflecting on topics concerned with the students' everyday life. In order to talk about health education and health promotion, though, it is necessary to leave the additive concept of subject teaching behind and assume an integrative concept that takes reflection to a more complex level.

It is important that in the course of action taken in teaching, a health promoting topic is first formulated, with regard to its multi-perspective. This topic exceeds the content-related boundaries of a single specific subject. Next, the topic that has been agreed upon is dealt with and conveyed to the students in co-operation with all the involved subjects.

Finally, the results are collected, visualised, ensured and evaluated. "Noise" in the gymnasium (or in the stadium) could, for instance, be explored in Physical Education. Noise measurements could be conducted in Physics. The physiological absorption and processing of noise could be taught in Biology. In Psychology the subjective consequences of being exposed to noise could be discussed and surveyed and in Geography students could be acquainted with noise-protection measures in urban building.

Cross-subject teaching, thus, extends the competency area of students and increases their ability and establishes a connection to their everyday lives. The goal of this kind of cross-subject teaching is to enable students to reflect on the multiple perspectives of health-specific issues and to master their everyday life by drawing on an extended repertoire of possibilities to act.

2.4.3.3 Health Projects

Project-based teaching and learning comprises all elements that cannot be found in teacher-centred teaching: Project days, project weeks, cross-subject teaching and/or subject-specific projects all focus on self-determined work on topics. School festivals,

excursions, experiments, alternative ways of teaching, jump & run play areas, and other didactic varieties of lesson planning are labelled "project".

Project-based teaching can be described as the methodical way in which students approach and deal with their social environment, by taking charge of and responsibility for their actions (Bastian & Gudjons, 1993). Project-based teaching not only focuses on a self-organised, interdisciplinary approach to dealing with health-relevant topics themselves, but demands the co-operation of students, teachers and other participants (e.g., external experts) (Fridrich, 1994). In didactical discussions, project-based learning and teaching is seen as a particularly effective method of conveying health-promoting issues, as there are many important advantages for the process of learning that arise from this form of teaching. By dissolving the traditional units (e.g., PE class of 50 minutes), for instance, new time and communication structures are created, which cause more contentment and more intensive learning activity in students. Project-based teaching is structured in specific phases (initiation, information, planning, production, presentation and evaluation) and can be highly recommended for discussing health topics and health-promoting issues in the school setting (Frey, 2007; Nohl, 2006).

2.4.4 Teaching Matrix and Learning Settings

The following chapter will introduce a model for lesson planning that is designed for teachers who engage school students in the discussion of health-relevant topics, based on the philosophy of Health(a)ware. Every concept of lesson planning derives from cross-linking the specific theoretical position of teaching and learning, structural features and education and theories and didactics. Planning concepts for school teaching can be systematically summarised in at least three groups (Peterßen, 2000b):

a. *Linear planning concepts*: A specific topic is planned step by step in one subject, regardless of mutual influence or dependence on other subjects.
b. *Circular planning concepts*: The overall concept of lesson planning is modified from time to time and expanded by detailed planning.
c. *Cross-linked planning concepts:* Teaching is seen as a construction and mutual influence of singular planning elements particularly taken into consideration.

The model plan for health education and health promotion in the school setting, according to our approach, is described in more detail. It is a cross-linked model plan that underlies the following criteria:

- The model plan is *theory-based*. In our approach all kinds of teaching and learning in the topic of health education and health promotion is oriented towards the concept of health literacy (see Chapter 2.1 and 2.2). The model plan at hand is based on the objectives described above and Health(a)ware's theory-based considerations.

- The model plan is *practical-related*: Our model has been developed for the presentation of selected topics as part of health education and health promotion. The teaching examples are "best practice" illustrations. The target group is students aged 12 to 16.
- The model plan supplies a *frame* to achieve the health outcomes and health promotion outcomes. Suitable topics and contents are selected from a canon of a variety of subjects.
- The model plan is to be seen as an *open and situation-adapted model* that can be differentiated and extended according to the changed topics, target group or institution.

The model plan is differentiated into three structural parts.

1. The **Teaching Information** includes module and type, topic, theme, corresponding module, corresponding subjects, and health objectives.
2. The **Contents** refer to the structure of the teaching example which includes different steps and tasks. The steps describe the main phases of the teaching example. Moreover, these steps are divided into different tasks which correspond to the objectives of the teaching example. The warm-up and cool-down phase are only described when they are part of the main subject.
3. **Additional Information** includes the references and offers links and other information.

References

Bastian, J. & Gudjons, H. (Eds.) (1993). *Über die Projektmethode hinaus. Projektlernen im Fachunterricht*. Hamburg: Bergmann & Helbig.

Benner, D. (2001). *Hauptströmungen der Erziehungswissenschaft*. Weinheim: Beltz.

Broesskamp-Stone, U. (2008). Best Practice in der Gesundheitsförderung und Prävention – Konzept und Leitlinien für Entscheidungsfindung und fachliches Handeln. In I. Spicker & G. Sprengseis (Eds.), *Gesundheitsförderung stärken* (pp. 79–94). Wien: Facultas.

Diederich, J. (1988). *Didaktisches Denken.* Weinheim & München: Juventa.

Dür, W. (2008). *Gesundheitsförderung in der Schule*. Bern: Huber.

Frey, K. (2007). *Die Projektmethode: Der Weg zum bildenden Tun*. Weinheim: Beltz.

Fridrich, C. (1994). Chancen und Grenzen des Projektlernens im österreichischen Schulsystem aus heutiger Sicht. *Schulheft, 74*, 7–31.

Huber, L., Kroeger, H. & Schülert, J. (1996). Eine Curriculum-Werkstatt für fächerübergreifenden Unterricht. *Zeitschrift für Pädagogik*, *42,* 575 – 587.

Jank, W. & Meyer, H. (2002). *Didaktische Modelle*. Frankfurt/M.: Scriptor.

Kurz, D. (1977). *Elemente des Schulsports*. Schorndorf: Hofmann.

Lenzen, D. (Eds.) (1997). *Erziehungswissenschaft*. Reinbek: Czwalina.

Lohaus, A. & Ball, J. (2006). *Gesundheit und Krankheit aus der Sicht von Kindern*. Göttingen: Hogrefe.

Meusel, H. (1976). *Einführung in die Sportpädagogik.* München: Fink.

Meyer, H. (2003). *Leitfaden zur Unterrichtsvorbereitung*. Berlin: Cornelsen.

Moegling, K. (1998). *Fächerübergreifender Unterricht. Wege ganzheitlichen Lernens in der Schule.* Bad Heilbrunn: Klinkhardt.

Nohl, F. (2006). *Der Projektunterricht. Grundlagen, Materialien, Bewertung*. Lichtenau: AOL.

Peterßen, W. H. (2000a). *Fächerverbindender Unterricht: Begriff–Konzept–Planung–Beispiele*. München: Oldenbourg.

Peterßen, W. H. (2000b). *Handbuch Unterrichtsplanung*. München: Oldenbourg.

Schierz, M. (1997). *Narrative Didaktik*. Weinheim: Beltz.

Stewart-Brown, S. (2006). *What is the evidence on school health promotion in improving health or preventing disease and, specially, what is the effectiveness of the health promoting school approach?* Copenhagen: WHO – Health Evidence Network Report.

Terhart, E. (2009). *Didaktik. Eine Einführung*. Stuttgart: Reclam.

3 Teaching Examples

3.1 Introduction

In the Health(a)ware project the topic health is approached in a multi-perspective way. In order to facilitate the learning process and make it attractive for young people, an innovative pedagogical and didactical approach was developed and presented in the previous chapters. According to this framework we differentiate the teaching examples into four modules: *Body & Environment*, *Body & Measurement*, *Body & Time*, and *Body & Bodies* (see Figure 9). They represent the range of individual, social-cultural, and environmental health topics to achieve health literacy on all three levels.

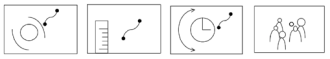


Figure 9: The four health modules in Health(a)ware

The following lessons are categorised according to this module structure.

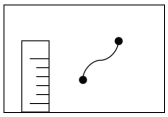
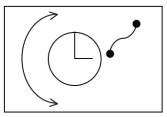
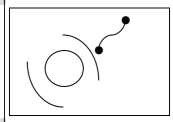
3.2 Body and Environment Module

Kerstin Ketelhut

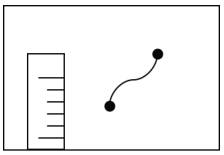
Teamwork Relays

1	Teaching Information

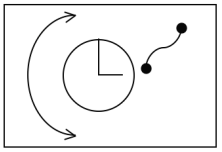
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

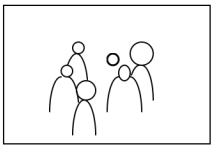
Corresponding Subject(s)	1.	2.	3.	4.



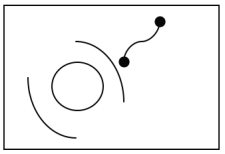
Body & Measurement



Body & Time



Body & Bodies



Body & Environment

2	Health Competencies

Physical Fitness

√ Students are trained in strength, reaction and coordination.

Knowledge

√ Students experience the meaning of cooperation and team spirit.

Body Experience

√ Students experience the feeling of speed and of body contact with a partner.

Psycho-social Skills

√ Students are performing team work with social competences, fairness, cooperation

Attitudes

√ Students learn about the effects of social behaviour and tolerance.

3	Conditions

Location/Facilities

√ Gym

Material List

√ Carpet pads/carpet squares
√ Roller boards/scooters
√ Cones
√ 1 Basketball
√ 2 Basketball baskets

4	Content

STEP 1

Task 1 Catch the Clothes Peg

Each student gets ten clothes pegs that he/she has to pin/clip on his/her clothes so that everybody can see them. Then, each student chooses a partner. The aim of the game for each two-man team is to collect as many clothes pegs as possible from all the other teams, while defending once own clothes pegs. The team with the most clothes pegs wins.

Interim Reflection

√ Why is this game good for developing social competency?
√ Why good team strategies ensure success?

STEP 2	For this game an even number of players is needed for each relay-team (for instance 4 teams with 6 players). Each relay team gets 4 carpet pads. **Task 1 "Scooter"** Two players of each team have to slalom hand in hand around cones with one foot on a carpet pad. Then, the next 2 players of the relay team get their turn. The relay team which finishes first will be the winner of the game. **Task 2 "Skiing"** Two players of each team have to slalom hand in hand around cones with a carpet pad on each foot. Then the next two players of the relay team get their turn. The relay team which finishes first will receive one point. **Task 3 "Slight"** For this game 6 players are needed in each relay team. One sits on a carpet pad and two others grab his/her hands and pull him around the cones. Then the next three players of the relay team get their turn. The relay team which finishes first will get one point. **Task 4 "Water Ski"** For this game 6 players are needed in each relay team. One stands on a carpet pad and two others grab his/her hands and pull him/her around the cones. Then the next three players of the relay team get their turn. The relay team which finishes first will get one point. **Interim Reflection** √ You want to be the fastest team? How important are synchronisation, rhythm and cooperation?

STEP 3	For this game an even number of players is needed for each relay-team (for instance 4 teams with 6 players). Each relay team gets 4 carpet pads. **Task 1 "Car Ride"** Two players of each team have to slalom around cones. One sits on the board and the other one pushes him/her with the board around the cones. Then the next two players of the relay team get their turn. The relay team which finishes first will get a point. **Task 2 "Horse Ride"** Two player of each team have to slalom around cones. One sits on the board and grabs a hoop in which the other one (the horse) stands and pulls him/her on the board around the cones. Then the next two players of the relay team get their turn. The relay team which finishes first will receive a point. **Interim Reflection** √ You are responsible for your partner on the board; you have to control the speed. The other one has to trust you.

STEP 4	**Task 1 Scooter Basketball** For these game 12 players, 6 boards, one basketball and 2 basketball-baskets are needed. This game is similar to the wheel-chair basketball game. Two teams play against each other in order to throw the ball into the basket as often as possible. Each successful throw is one point. Each team has 6 players but only the players who are sitting on the board can play. The three others have the task to push their partners in a good position that they get the ball and can shoot the ball into the basket. After two minutes the partners switch their positions. **Interim Reflection** √ Good cooperation is needed. Each action depends on both partners. They can only function as a team.

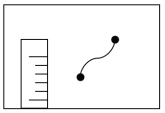
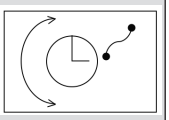
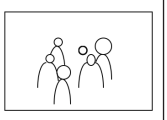
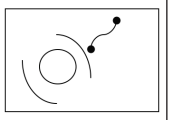
	Final Reflection √ Did you like this kind of game? √ What is different to non-cooperative games? √ How do you feel when you cooperate with somebody? √ How do you feel when you realised that you need your partner in order to fulfil the cooperative task and to be successful? √ Did these cooperative games help you to understand the meaning of team spirit?

Ida Laudanska-Krzminska, Adam Kantanista,
Malgorzata Bronikowska & Monika Ciekot

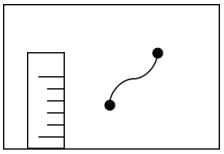
Lifetime Sports

1	Teaching Information

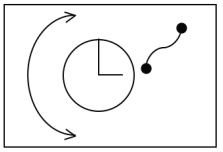
Type of Teaching Example		
Physical Education class	Cross-Subject PE & corresponding subject(s)	Health Project PE & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

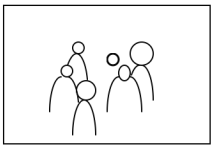
Corresponding Subject(s)	1.	2.	3.	4.



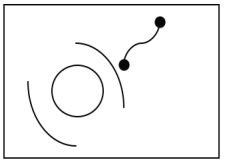
Body & Measurement



Body & Time



Body & Bodies



Body & Environment

2	Health Competencies

Physical Fitness

√ Students develop strength by practising forms of climbing, sense of rhythm in dance

Knowledge

√ Students know the significance of lifetime sports .

Body Experience

√ Students are able to interpret music with movements
√ Students are able to compose and perform a dance routine
√ Students are able to design a set of exercises

Attitudes

√ Students recognise the need to take up lifetime physical activities
√ Students are physically active individually and in a team

3	Conditions

Location/Facilities

√ Gym

Material List

√ 3 large sheets of paper, 60 paper cards, CD player, gymnastic benches, boxes, sashes, ropes (to construct a climbing course), paper and pencil for each student

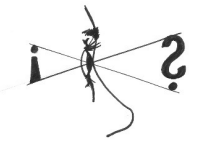
4	Content

STEP 1	
	Task 1
	Introduction
	√ Presentation of the lesson's objectives

STEP 2	**Task 1 – Motor Game "Generations"** Generations – physical activities for me, my parents and my grandparents Number of students: unspecified, divided into 3 teams Equipment: 3 large sheets of paper, 60 paper cards containing topics of physical activities (topics can be repeated) **Task Description** Three large sheets are hung on the wall bars; the first sheet bears words: (1) Physical activities for me; (2) physical activities for my parents; (3) physical activities for my grandparents. Each sheet is divided into three parts – one for each team. The cards are scattered all over the floor with the printed side down. Each team then collects the cards and match the topics of the activities with the parts of the large sheets at their discretion. **Interim Reflection** √ Discussion about lifetime sports. Questions: What is a lifetime sport? Can you think of some specific examples? Please, justify your choices.

	Final Reflection √ Students write down the arguments of their choice of one physical activity as a lifetime sport. Then students sit together with regard to similarities in their selected sports and explain their choices.

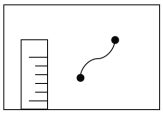
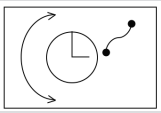
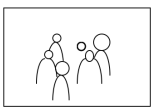
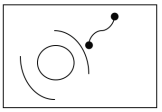
Irena Parry Martínkovà



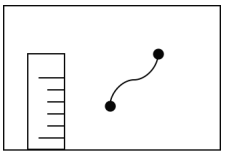
Addictions

1	Teaching Information

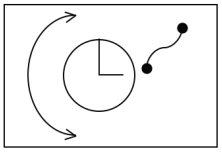
Type of Teaching Example		
Physical Education Class	Cross-Subject P.E. & corresponding subject(s)	Health Project P.E. & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	Body & Time	Body & Bodies	Body & Environment

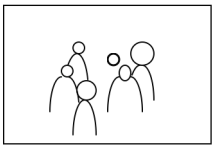
Corresponding Subject(s)	1. Social Sciences	2.	3.	4.



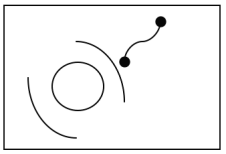
Body & Measurement



Body & Time



Body & Bodies



Body & Environment

2	Health Competencies

Knowledge

- √ Students learn about different kinds of addictions people generally have in their lives.
- √ Students realising how habits constrain us
- √ Students learn about habits and addiction in relation to freedom
- √ Students are recognising different levels and areas of addiction.

Body Experience

√ Students experience how habits shape our body/movement and constrain our freedom.

Psycho-social Skills

√ Students are recognising the relation of addiction to social context

√ Students are realising what addictions apply to them personally

3	Conditions

Location/Facilities

√ Classroom or a gymnasium

Material List

√ Blackboard

4	Content

STEP 1

In this lesson the problem of addiction is presented in its widest sense and is related to the issues of habits, freedom, openness and health. Most of us are more or less dependent on different things, even though we do not usually realise it. The aim of this lesson is to see the topic of addiction in its broadest sense, and to explore it.

Task 1 Brainstorming

It will help the students (and the teacher, so that he or she finds out what the students know) to see the scope of the topic.

Students think about different things that are often associated with serious addictions in our society:

- Harmful substance addiction (drug abuse, alcohol abuse)
- Addiction to electronic items (PC games, mobile phones, TV)
- Dependence on a person
- Co-dependency (doing everything to please others at the expense of the self)
- Certain food addictions
- Sport fanaticism
- Work holism
- Dependence on sects
- Addiction to gambling, etc.

STEP 1

Task 2

Students think about the different things that we can generally be addicted to, and that are not usually mentioned in our society:

– - Addiction to keeping healthy ("healthism")
– - Addiction to being beautiful, slim etc.
– - Addiction to sex
– - Addiction to money
– - Addiction to ideas (dogmatism)
– - Addiction to the sunshine, etc.

Other dependencies should also be mentioned, such as our habits, that is, our stereotypical reactions of behaving towards others or to things. These can be observed in the example of our body.

Task 3

Addictions are culturally dependent, that is, they depend on different cultural values, and how they are presented in newspapers/other media. Students think about which social settings support which kind of addiction.

Task 4

Students try to think about and express the difference between freedom – habits – addictions.

What should be stressed here is that being dependent suppresses the freedom of a person, as it determines their behaviour in advance and does not allow freedom of choice.

It is also worthwhile to see the slow development of addiction in this context, for example in drug abuse, in which 5 steps can be recognized:

1. A singular experiment
2. Recreational use (weekends)
3. Dual identity
4. Addiction
5. Total drug lifestyle

Interim Reflection

√ Recent newspaper, magazine, or textbook articles can be read on the topic and discussed, as a starting point.

STEP 2	**Task 1** Students suggest any first associations with certain words that assume addictions (e.g., the words: drug, money, alcohol). **Task 2** Students try to say or write down different things they think they are dependent on. **Task 3** Students try to say what they could give up and what is not possible for them to give up. **Interim Reflection** Since telling everyone about one's own addictions may be very personal, it may be a teacher who presents some of his addictions first (e.g., I am addicted to chocolate) or students may start generally all together to get an idea about the exercise, each of the students making their own list. Then they choose one item they want to present to the others, saying what the addiction would mean for themselves (in terms of consequences) and how they could be prevented (maybe for homework).

STEP 3	**CLASSROOM** Students try to see their habitual reactions, on the example of their bodily responses **Task 1** Students make a fist then stretch their hand. The hand usually does not return to its open position, but stays quite tense – even after full stretching it returns persistently back to a more or less closed position. Students are led to noticing their hands during the day to see to what extent they keep them in a fist and how habitual the contraction of the muscles of their hands is. This exercise demonstrates how our habits are steady and persistent and how hard it is to change. **Task 2** Students write down some text with their dominant hand and in the meanwhile they try to notice what their whole body is doing during this activity (how it moves, where there are tensions). Then they try to write with their less dominant hand and try to notice how their whole body reacts when they do this. How do these two ways of writing differ?

	Interim Reflection √ Feedback after each activity.

S T E P 4	**GYMNASIUM** Students try to see their habitual reactions, on the example of their bodily responses. **Task 1** Students try to perform various movement activities with their less dominant limbs, so that they can see to what extent they are led by their habits. They try to tell the difference between performing an activity with their dominant and less dominant limb. **Task 2** In pairs, one student walks in the gym in different directions (as naturally as possible) and the other one follows him/her, trying to imitate his/her way of walking. Here, it is important to notice, e.g., the movements of the head, arms, legs, knees and feet, the rhythm and pace. After finding out about their way of walking, the students try to walk differently (in a less constrained way) than they are used to. Like this they are noticing their habits and their constraining effect on them. **Interim Reflection** √ Feedback after each activity: Students say what they have found out.

	Final Reflection Students say what they learnt during this lesson – about their addictions and about their habits.

5	Additional Information

References

√ Dewey, J. (1950). *Human Nature and Conduct*. New York: Modern Library.

It is recommended that a psychologist is invited for this lesson to speak on the problem of addiction more deeply. Then more detailed possible causes of addiction can be discussed–how addiction arises and what it includes, and also possible ways of prevention and intervention can be presented.

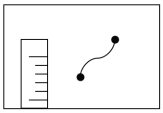
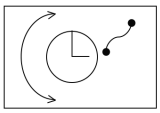
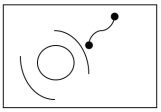
The topic of habits can be seen, for example, in Dewey's book *Human Nature and Conduct* (1950). Dewey says that habits are a part of ourselves, or even more radically: habits are ourselves (Dewey, 1950, p. 24). According to the author, a habit is formed through prior activity and is understood as a dynamic projective force, will or energy organized in certain channels, which determines our thinking and conduct. Dewey recognizes two kinds of habits: routine habit and intelligent habit. The routine habit has been adapted to past conditions that no longer exist, and thus may be inappropriate within a new situation. In this way the human being allows the mechanical to prevail and to dictate his or her performance. An intelligent habit does not separate thought from itself and therefore is not purely mechanical, but is free and flexible, and open to changed or new circumstances. Practical examples of the work with habits are done in Step 3.

Markus Prill

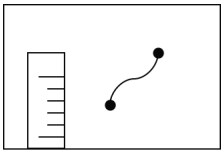
Weather Conditions

1	Teaching Information

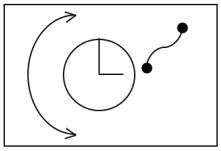
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

Corresponding Subject(s)	1. Biology	2. Geo-graphics	3.	4.



Body & Measurement



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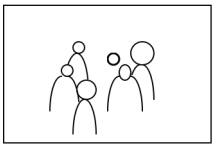
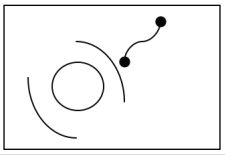


Body & Bodies



Body & Environment

2	Health Competencies

Knowledge

- √ Students get to know that the weather conditions for beach-volleyball need to be taken in consideration, they are aware about the risks.
- √ Students get to know the requested amount of water supply due to the different phases of the game.
- √ Students get to know the specific beach volleyball-techniques.

Body Experience

√ Students experience thirst, cold, sweat, exhaustion as effects of intensive exercise during the
√ game.
√ Students getting experience of water supply and the positive effects on performance and individual well-being.

Psycho-social Skills

√ Students are performing cooperation while playing.
√ Students are getting a better body awareness & self-perception.
√ Students are trained in decision making & self-regulation.
√ Students experience themselves as part of a team.

Attitudes

√ Students are educated in active self-protection (skin protection).
√ Students are planning and using self-protecting measures (preparation of the game, breaks, water supply).

3	Conditions

Location/Facilities

√ Outdoor

Material List

√ Beach Volleyball Court
√ Volleyballs
√ Sun Milk (different protections factors)

4	Content

S	**Task 1**
T	Students activities: Experiencing and practicing of different types of attack (tomahawk, poke-shot)
E	**Task 2**
P	Usage of different techniques and strategies (attack, block, defence)
	Task 3
1	Students are playing Volleyball including warming up and cool-down.

	Interim Reflection √ Experiences, background information, feedback (questions and comments) √ Experiences of thirst, fatigue, and exhaustion

S T E P 2	**Task 1** Experimenting with different amounts of water supply **Task 2** Students are supposed to find out the individual amount of water due to the time frame of the game. **Task 3** Students are playing Volleyball including warming up and cool-down. **Interim Reflection** √ Discussion of individual experiences

S T E P 3	**Task 1 Experiences** Finding out best water supply, individual well-being, fitness of legs, shoulder, back muscles. **Task 2 Sun Protection** Using skin protection, different products of sun lotions; sun protection factors; different skin-types, alternative sun protection; **Task 3** Students are playing Volleyball including warming up and cool-down. **Interim Reflection** √ Discussion of individual experiences √ Summary of the experiences under the different aspects of Biology, Geography and PE/ Beach volleyball

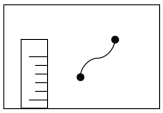
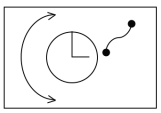
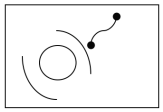
	Final Reflection √ Reflection of individual experiences, background information, feedback and questions and comments

Christiane Desaive

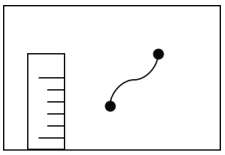
Climbing and Nature

1	Teaching Information

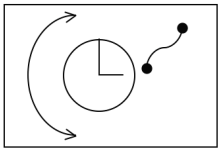
Type of Teaching Example		
Physical Education Class	Cross-Subject P.E. & corresponding subject(s)	Health Project P.E. & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	Body & Time	Body & Bodies	Body & Environment

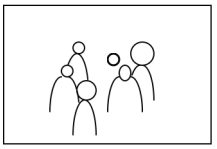
Corresponding Subject(s)	1.English Language	2.	3.	4.



Body & Measurement



Body & Time



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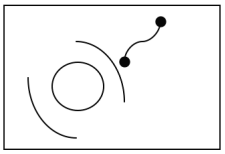


Body & Environment

2	Health Competencies

Physical Fitness

√ Students experience kinaesthetic feelings of all parts of their body.

√ Students improve the muscular system: Strength, endurance, coordination and balance.

√ Students learn to pass the courses by climbing, jumping, balancing and swinging.

Knowledge

√ Students improve the vocabulary in English while learning the basics about climbing.

√ Students are able to write down a critical “Movement Diary” of one to two A4 pages in length.

Body Experience

√ Students experience body-feelings by climbing in nature and moving their body in unusual positions.

√ Students learn about their muscle abilities and also how to experience the limits of the own body's physical abilities.

√ Students find themselves in new situations and interacting with nature in unusual ways, especially when they use equipment like "slack lines".

Psycho-social Skills

√ Students learn to be self-confident and rely on others.

√ Students get to know about "Goal Setting Strategies".

3	Conditions

Location/Facilities

√ Classroom: For English lesson.

√ Gymnasium: First climbing experiences

√ Climbing forest: To transfer the (new) acquired motion abilities and vocabulary in the final step.

Material List

English

√ *PC*

√ *Projector*

√ *Blackboard*

√ *Dictionary*

√ *Overhead Projector*

√ *Index Cards*

PE

√ *Coloured Ties*

√ *Gym Ball*

√ *Music*

√ *Radio*

√ *Index Cards with parts of the body*

√ *Index Cards with food-terms*

√ *Benches*

√ *Caste*

√ *Matting*

√	*High Bar*
√	*Bar*
√	*Rings*
√	*Wall bars*
√	*Slack lines*
√	*Medicine ball*
√	*Chalk*

4	Content
S T E P 1	**English Lesson** Preparing lesson (writing an activity diary) **Task 1** Using medias: watching a video about rock climbing. **Task 2** Impressions: Talking about the video and the thoughts. The students ask questions and discuss in whole sentences about the video or about the topic climbing at all. **Task 3** Blackboard: Collecting new words, special climbing-words. These words should be used as mind map. **Task 4** Stabilising the new words: The students should write down 2-3 sentences about themselves as a rock-climber. **Task 5** "Project Adventure": what does "challenge" mean for you? The students collect ideas and thoughts about the topic "challenge" by the help of the overhead-projector. **Interim Reflection** √ The students discuss their own experiences and feelings about challenge and fear.

STEP 2

Physical Education Lesson

Climbing-prearrangement with the topics fitness and endurance

Task 1 Special Warm-up

Running: Each student fastens a band at the trunks, so that a "tail" hangs out. Now the students run in the gymnasium and everyone tries to steal as many "tails" from the others as possible. These who don't have any bands at the end have to remove the "tails".

"Planet ball": The students lie down at the ground on their tummies with their heads towards each other (building an alleyway). Beginning on one side the students try to put up their arms and a huge fit ball will be put on top. Now the students try to lead the ball on their hands to the other side. The ball is not allowed to touch the ground and the students have to keep on lying down. The students that passed the ball have to get up and run to the other end of the alleyway. How far can the students pass the ball? How quickly can they pass it? The teacher can also make a competition between two (three, four?) groups

Task 2 Building up Body Contact and Trust

Greeting: The teacher plays music and the students have to run across the gymnastic hall. When the music stops, the teacher calls out one body-part (e.g. foot) and every student has to say hello to as many others as possible by touching the body-parts together (e.g., the feet). The teacher restarts the music and repeats the "greeting" by calling out and touching other body-parts.

The "Sandwich Game": All students run through the gymnasium (to music). Then the teacher calls different kinds of food and the students react as followed:

Carrots: Every student lies down alone.

Sandwich: Two students lie on top of each other.

Hot Dog: Three students lie on top of each other

Cheese Sandwich: Four students lie on top of each other

Big Sandwich: Five students lie on top of each other

Task 3 "Crossing the River"

Two benches are put on one side of the gymnasium. Two groups stand at either side and by the teacher's command the students try to cross the "river" without touching the ground. Who is able to cross the river without (or by the fewest) steps on the ground?

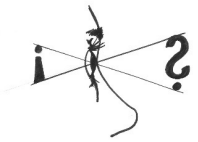
STEP 2	**Interim Reflection** √ *What happened?* √ *How did I feel thereby?* √ *Expectation for the next time...*

STEP 3	**Task 1 Repeating the new words** By reflecting on the last lesson the students repeat the words they learned in that lesson. (Maybe talking about the homework?) **Task 2 Contract** Because of the special challenge of the project, the students and the teacher make a contract: The "Full Value Contract": We work as a group; Individual or group aims are important. We follow the safety Individual rules and the rules of the group. We give feedback to each other – positive and negative. We take the feedback seriously. **Task 3 Activity Diary** As homework or in lesson: The students write down the expectations of the excursion into the climbing-forest. In lesson: Talk about their ideas and expectations As homework: Talking about the homework after the final excursion day in the English lesson. **Interim Reflection** √ What can happen? The students develop awareness of the risks and fears of the climbing session. √ How can I feel thereby? How can others feel thereby? Getting a feeling for the thoughts and fears of others. Students learn to appraise the feelings and thoughts of others (empathy). √ Expectation for the excursion...

S T E P 4	**Physical Education: Teaching "Climbing-fitness" in the Gym** **Task 1** Warm-up: The students run around the gym. When the teacher gives a sign, they have to do special exercises like push-ups, squats and basic-jumps, running backwards or trying to catch another student (without getting catch by another one). Every exercise has its own sign. **Task 2** The teacher builds a climbing-course in the gym by using the gymnastic materials equipment like Benches, Castes, Mattings, High Bar, Bar, Rings, Wall bars and, if available, a Slack line **Task 3** Cool down: Stretching of the accessed muscles and relaxing at the end. **Interim Reflection** √ Feedback (maybe by making a BBQ): How did everyone feel? Would they like to repeat a lesson like that? √ What about feeling: secure? Trust? Body experiences? Trust in the own body? In the own abilities?

	Final Reflection The PE teacher and the English teacher work on the overview perspective. Activity diary produced: What about the written expectations and what about the real climbing?

3.3 Body and Time Module

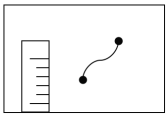
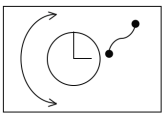
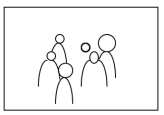
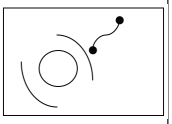


Konrad Kleiner

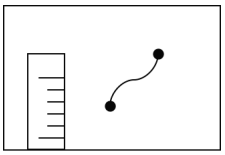
Experiencing the Body

1	Teaching Information

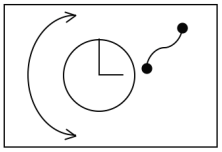
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

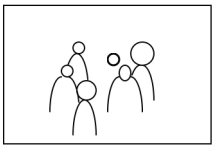
Corresponding Subject(s)	1.	2.	3.	4.



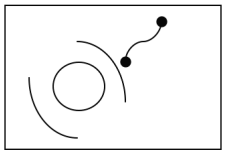
Body & Measurement



Body & Time



Body & Bodies



Body & Environment

2	Health Competencies

Physical Fitness

√ Students are getting trained in general fitness through various exercises and motion tasks.

Knowledge

√ Students are getting knowledge about the influence of the senses on one's own actions.

Body Experience

√ Students are getting more sensitive for dangerous situations.

√ Students understand one's own reactions to stress, nervousness, effort, etc..

Psycho-social Skills

√ Students are taking responsibility for one another.

√ Students are trained in self-responsibility.

√ Students receiving sensitisation for cooperative behaviour

Attitudes

√ Students getting sensitisation for situations creating a physical handicap.

√ Students are encouraged to listen to their bodies in daily life and to recognise and understand the signals their bodies.

3	Conditions

Location/Facilities

√ Gym

√ Sports ground

Material List

√ Music

√ Enough space or various possibilities for balancing exercises and for exercises with blindfolds

√ Raceway

√ Data sheets

4	Content

STEP 1

Task 1

To get the circulation going: A little warm-up game is played. Various running games, rope skipping, etc. can be used for this purpose. It is important to keep the effort at an aerobic level.

Task 2

After warm-up, each student should learn how to take their own pulse and record it.

Tip: Pulse taking with two fingers at the wrist.

STEP 2

Task 1

Set-up: The students form teams; they are told that the partners have responsibility for one another.

Task 2

Student A balances along a rope lying on the floor or along a drawn line. He/she briefly describes to student B if and how he/she was able to do that. Then, A looks to the ceiling while spinning around him/herself about 10 times. B guides A responsibly and counts out the number of spins aloud. Immediately after this, B puts A on the rope/line again. A tries balancing along the rope/line anew. Then, A tells B what he/she felt, how he/she managed to fulfil the task and what this implies for daily life.

Variation:

- √ It is also possible to balance over a gymnastics bench (upright or upside down) or a lowered balance beam.
- √ Blindfolding to completely eliminate the possibility of visual orientation.

Task 3

A and B swap tasks.

Interim Reflection

After the exercise the students talk about their senses – which ones were eliminated or limited?

- √ What is the consequence for our body when senses are disabled?
- √ What happens to the remaining senses?
- √ What about our senses during sports? What influences us (exams, stress, fear, etc., but also physical effort) during physical activity (and in daily life)? What other senses can we disable? What are senses actually, and do we have more than the senses of sight, touch, smell? Emotional senses? (refer to step 3)
- √ Furthermore, discuss what disabled/limited senses mean where safety and security are concerned.

S T E P 3	**Task 1** Set-up: The class is told that the following exercise is a competition: The goal is to run as far as possible on the raceway in 7-10 minutes. Variation √ Alternatively, another exercise/game can be announced that requires the participants to perform some sporting achievement. √ The students run according to the "buddy" system, which means that they are responsible for one another and have to be attentive to their partner in addition to themselves, adding a new constraint. **Task 2** Process: After the introduction, the students fill out a form, indicating on a scale how they feel (excited, nervous, calm, relaxed, tired, and full of expectation). After this, the game/competition/etc. starts. **Task 3** Datasheet: After the exercise, the form is filled out again. Variation: It is also possible to distribute the form one hour beforehand. In this case, before being given the forms, the students are told that there will be a gentle cross-country run later on. In the following period, start with Task 1. **Interim Reflection**

S T E P 4	**Task 1** The students rub their hands, then lie down on the ground, spread out all over the gymnasium. They lay their warm hands on their eyes, and then concentrate on their breathing. One student is tipped on the shoulder, gets up, tips another one on the shoulder, and then quietly leaves the gym.

	Final Reflection After the task is completed and the forms are completed, the results are discussed. This can be visualised on a flip chart where each student sticks a sticker corresponding to his mood before and after each exercise onto the right spot of the table (columns 1-5). The resulting table is then analysed. Possible aspects: How do I react (nervousness…)? How does my body react (pulse, sweating etc.) in different situations (cross-country run vs. performance expectations before and after the run/while running in a "buddy" system)? What effect does that have? √ How does nervousness etc. influence our (sporting) performance? √ So those things too are handicaps for you?

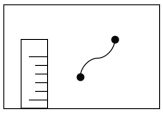
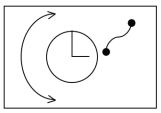
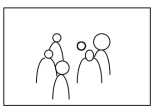
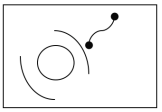
5	**Additional Information**

Irena Parry Martínkova

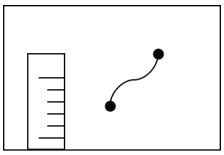
Relaxation Techniques

1	Teaching Information

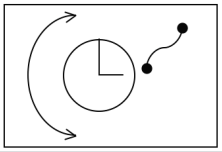
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

Corresponding Subject(s)	1.	2.	3.	4.



Body & Measurement



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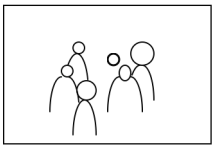
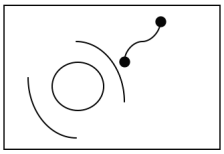


Body & Bodies



Body & Environment

2	Health Competencies

Knowledge

Students get to know to cope with stress through relaxation.

Body Experience

√ Students getting a feeling of relaxation in contrast to tension.

√ Students recognise different intensities of muscle tension so that they can be released.

Psycho-social Skills

√ Students experience a state of inner calmness.

3	Conditions

Location/Facilities

√ Gymnasium with a quiet environment and preferably dim light

Material List

√ Mats to lie on or a carpeted floor

√ A blanket for each student for colder gymnasiums

4	Content

STEP 1	**The topic of stress is introduced to students.** **Task 1** Students say in which situation(s) they feel stress themselves, and which situations are usually associated with stress in our society. **Task 2 Introduction of Jacobson's Progressive Relaxation** Students say what techniques they know for coping with stress. This technique works on the principle of 'tense-release', e. g., contracting and subsequently releasing specific groups of muscles. After learning to identify the tension sensation, students learn to relax it. This is a basis for calming the whole organism.

STEP 2	**Task 1** Students lie on their backs, arms resting on either side of the body, legs uncrossed, with their eyes open. They are introduced to what they are going to do: by creating and releasing tension they will be able to relax more profoundly. For this, they need to learn to work with different groups of muscles, which may be hard for them at the beginning, but they should just try their best. Now the students close their eyes – not actively, but simply allow the muscles around the eyes to lengthen.

STEP 2

Task 2

Students will try to recognise tension and relaxation. They will raise the hand at wrist steadily, without seesawing and wiggling. While the hand is being bent back, the vague sensation in the upper surface of the forearm (tightness) is the signal of tension that the students are to learn to recognise. Students hold this position for a minute or two, studying the tension. Then the hand is relaxed for a few minutes. (See more in McGuigan & Lehrer, 2008, 74)

Task 3

For trying to work with some of the biggest muscle groups, students will follow the following instructions of the teacher, which should be said in a quiet voice. Students will first inhale and squeeze the given group of muscles as hard as they can for about 8 seconds and then release the tension and relax it (e.g., for tension in the hand they will make a tight fist).

The teacher introduces the following groups of muscles:

right foot – right lower leg and foot – entire right leg – left foot – left lower leg and foot – entire left leg – right hand – right forearm and hand – entire right arm – left hand – left forearm and hand – entire left arm – abdomen – chest – neck and shoulders – face.

Task 4

After the 'tense-release' part, students will slowly gain awareness of the gymnasium, open their eyes, scan the interior of the room, bend and stretch their limbs. Then they will slowly stand up.

Interim Reflection

Beginners usually make the mistake of allowing too many muscles to be involved in the intended group–therefore they need to be told beforehand that this is normal for beginners, and that they can learn it with practice.

- √ The teacher should not tell the students what they should feel, but allow them to discover it for themselves.
- √ The teacher should then take feedback on what students felt and whether and when they think they might use this technique.

In learning progressive relaxation, students are never told that they are doing well, that they are getting better, that they are relaxing, that their hands feel heavy, etc. Instead, they can be aided by the teacher, as in any other learning procedure (McGuigan & Lehrer, 2008) Now, students are going to be introduced to a very different technique from this one (see Step 3).

STEP 3

Task 1 Introduction of Autogenic Training

Autogenic training works through suggestions that promote relaxation, feelings of deep calmness and the triggering of natural healing processes. The suggested thoughts include:

1. Heaviness in the arms and legs
2. Warmth in the arms and legs
3. Calm and regular heartbeat
4. Calm breathing
5. Warm solar plexus
6. Cool forehead.

Task 2

Students attain non-striving, passive concentration in a lying position with closed eyes, ignoring coming thoughts. Students imagine themselves in a place that makes them feel relaxed. First, the teacher helps them to relax their bodies by scanning the body parts and reminding students of their lightness – from the feet to the head and its parts (e.g. allow your toes to relax, focus on your soles and imagine them relaxed, and so on).

Task 3

Students are told the following phrases in a slow soothing pace, about 40 seconds apart:

1. I feel at peace.
2. My right (dominant) arm is heavy (as lead).
3. My right (dominant) arm is heavy.
4. I feel at peace.
5. My right (dominant) arm is heavy.
6. My right (dominant) arm is heavy.

Students repeat relaxation inducing phrases, imagining their effect upon themselves. They should not exert effort to force the response, but rather let it happen.

S T E P 3	**Task 4** After a few minutes of thinking about the heaviness of their arm, students are told to become slowly aware of the room, open their eyes, scan the interior of the room, make a few fists, bend and stretch their limbs and tell themselves that they are fresh and alert. Then the same procedure (sentences about heaviness followed by becoming alert) is repeated two more times. Then students may try to do the same with other parts of their body – this time just once as an introduction: their left arm, both arms, right leg, left leg, both legs, both arms and legs, according to the choice of the teacher. **Final Reflection** √ This lesson is just an introduction – therefore students will work with just the first step (feeling of heaviness). √ Discussion of the students' feelings and opinions about using the technique.

5	Additional Information

References

√ McGuigan, F. J. & Lehrer, P. M. (2008). Progressive Relaxation. In P. M. Lehrer, R. L. Woolfolk & W E. Sime (Eds.), *Principles and Practice of Stress Management*. New York: Guilford Press.

√ Payne, R. A. (2005). *Relaxation Techniques*. Edinburgh, London: Elsevier Limited.

There are various relaxation techniques, depending on what aspects are emphasised. In this lesson, students will be introduced to a somatic technique (Jacobson's progressive relaxation) and a cognitive technique (autogenic training).

It is recommended that the teacher should read a book on relaxation and a more detailed description of both Jacobson's progressive relaxation and autogenic training in his or her own language.

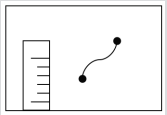
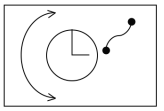
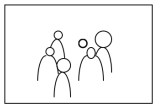
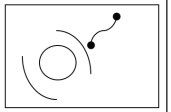
It is necessary to keep in mind that 'relaxation' is not simply a rest (such as 'bed rest' or watching TV), but an effective rest, which we generally need to learn how to do. It may take a long time to learn to relax, because a lifetime of ignoring one's body and using bodies unwisely cannot be quickly cured (McGuigan & Lehrer, 2008) and therefore it is better to start early.

Konrad Kleiner & Elisabeth Lenz

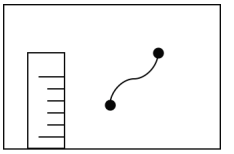
Postural Problems

1	Teaching Information

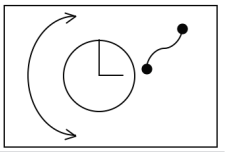
Type of Teaching Example		
Physical Education Class	Cross-Subject P.E. & corresponding subject(s)	Health Project P.E. & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	Body & Time	Body & Bodies	Body & Environment

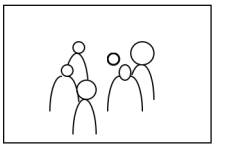
Corresponding Subject(s)	1.	2.	3.	4.



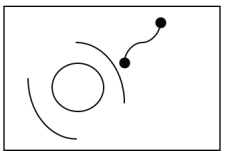
Body & Measurement



Body & Time



Body & Bodies



Body & Environment

2	Health Competencies

Knowledge

- √ Students are getting able to explain poor posture to a classmate.
- √ Students get to know how to recognise poor posture in classmates.
- √ Students get to know how to correct “malposition” and “false posture”.

Body Experience

- √ Students are getting experience in the own posture.
- √ Students learn useful things associated with “upright” posture.

Attitudes

√ Students recognise the link between one's posture and mood.

√ Students learn how to modify one's posture for better health and supporting the change through training.

3	Conditions

Location/Facilities

√ Gym

√ Grass field

Material List

√ Music

√ Slides / transparencies with exercise descriptions

4	Content

STEP 1	**Task 1 Letting off steam** In preparation: the students move around freely, to let off steam and to physically express all the positive and negative energies they have experienced previously during their school day.

STEP 2	**Feeling, recognising, improving posture** **Task 1** Set-up: The students remove their shoes and spread out through the gym. Each student closes their eyes and concentrates entirely on themselves. **Task 2** Process: The teacher speaks in a calm voice and leaves long enough pauses for the students to be able to concentrate on themselves and to experience their own body: Spread your legs so that your weight is evenly distributed between both your feet. Close your eyes. Come to rest and examine your posture with your "inner eye". Be careful to concentrate only on yourself. Listen to yourself and find out in silence how you feel right now. Are you relaxed or rather stressed and tense? What is enjoyable to you, what isn't? Now turn your attention to your feet.

STEP 2	Think about a name or a description of your posture. Now open your eyes, look around the gym, stay calm and start by looking at your posture. **Task 3** Find the right posture: Now, under guidance of the teacher, the right posture is assumed, felt and internalised. All eyes remain closed; the teacher still speaks in a calm voice. The students are told to slowly leave the posture and walk around calmly around the gym. Variation: Partnering – Student A assumes his/her "daily posture" and B describes this posture. Then, the posture is corrected according to the teacher's instructions.

STEP 3	**Task 1 Muscles and posture** Discussion of why and which muscles tend to weaken and shorten. How can this be checked? → Muscle function tests. How can we support those muscles? What influences our posture? (Computer, etc.) √ What happens to the muscles? (→ weakening, shortening)

STEP 4	**Task 1** In each of the following periods, a small amount of time should always be used to perform a muscle function test and a corresponding compensatory exercise in teams. For this, every child is given a personal posture sheet to write down the test results. At the end of the school year, comparison with the beginning.

	Final Reflection √ What were your experiences? Describe what you felt in the first, your own posture and in the second, guided by me. Were there any differences? √ How can you control your posture yourself? How can you improve and support it? (refer to step 3) → Explanation of compensatory exercise that should do on your own from now on (even at home).

5	Additional Information

References

√ Boeckh-Behrens, W.-U. & Buskies, W. (2006). *Fitness-Krafttraining. Die besten Übungen und Methoden für Sport und Gesundheit*. Reinbek: Rowohlt.

√ Zimmermann, K. (2006). *Gesundheits-Muskeltraining. Praxishandbuch*. Schorndorf: Hofmann.

√ Lippert, H., Herbold, D. & Lippert-Burmeister, W. (2002). *Anatomie. Text und Atlas*. München: Urban & Fischer.

Children and adolescents spend many hours a day in front of the Computer. Sports and physical activity are cruelly neglected. Weak and shortened muscles are the natural consequence, leading to poor posture and postural deformities. Physical education's task is on the one hand to bring to light pre-existing bad postures and deformities through appropriate exercises, so that they can be counteracted. On the other hand, sport also has a preventive function by reducing the time children spend in front of the screen (by giving them a joyful, enthusiastic attitude towards physical activity).

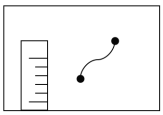
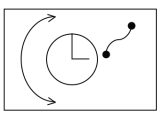
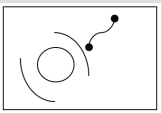
For the target group's health, preventive protection is of decisive importance. At this age, it is still easy to influence posture, and muscular strength is very trainable during puberty. It is therefore particularly important to explain the advantages of painless and correct posture to the children and adolescents and to protect them from further repercussions.

Annette Walter

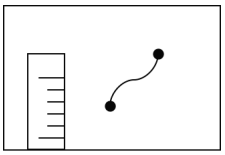
Coping Techniques

1	Teaching Information

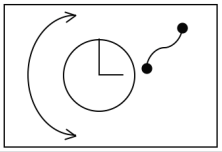
Type of Teaching Example		
Physical Education Class	Cross-Subject P.E. & corresponding subject(s)	Health Project P.E. & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	Body & Time	Body & Bodies	Body & Environment

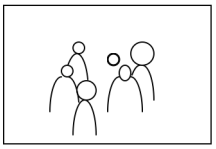
Corresponding Subject(s)	1.Biology	2.	3.	4.



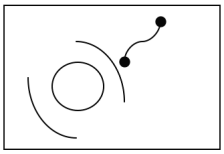
Body & Measurement



Body & Time



Body & Bodies



Body & Environment

2	Health Competencies

Knowledge

√ Students getting knowledge about the complexity.

√ Students focus on physical reactions to stress.

√ Students are trained in awareness and acceptance of individual differences.

Body Experience

√ Students experience body perception, tension and relaxation.

√ Students performing the Hedgehog-ball massage - allow touch and give touches.

Psycho-social Skills

√ Students develop and adhere to rules.
√ Students perform teamwork, sharing sessions and learn from each other.
√ Students are faced with acceptance of individual differences.

Attitudes

√ Students are trained to deal with pauses, thinking and positive thoughts.
√ Students are motivated to be creative and have fun.

3	Conditions

Location/Facilities

Room with space for mats, fresh air

Material List

√ Mats, pillows or carpets
√ Wrapping paper, pens
√ Hedgehog-Balls, calm music

4	Content

STEP 1

Task 1 Self-awareness

How is it today? Every student goes ahead and marks on a one-dimensional scale with the values "very good" to "very bad".

Task 2

Presentation of the current goals and tasks of the lesson; ideas for change. Group agrees on rules: Everyone speaks for themselves–first try, then judge; confidentiality and respect.

Task 3 Warming-up

Educational theatre run: All move through the room and greet each other while assuming different roles, quite normal at first, as always: totally happy, angry, brilliant as on your own birthday, sad, royal, and stressed for time, etc.

S T E P 1	**Interim Reflection** √ If students feel particularly bad, there could be a personal interview including the opportunity to represent their own stress in detail. √ What does stress mean to each of us? Recognising stress, understanding it and coping with it.

S T E P 2	**Task 1 What is stress?** Move the ball around with the question: When do the students experience stress. The ball gets thrown rapidly to individuals and that student has to respond immediately, in what situations they feel stressed. Then explain stress definition: 4 components (emotions, thoughts, body, behaviour) (Target: everyone is involved in the exchange of experience, sometimes provoke stress, knowledge of strain, short introduction of the stress-models'). **Task 2** "Body stress" Introduction into the issue of individual stress; Ideas and experiences; group work with 4-6 students. In teams, students draw the contours of a person onto a huge piece of paper (1 x 2 m). Into this figure the students write typical physical symptoms of stress. Helpful questions might be: "Imagine you are really stressed. How do you feel? How does your body feel? Is something hurting? Is something uncomfortable? The students have to write down anything a stressed person might feel. These writings can be individually different. The results are collected without comment in the group. **Task 3** Collection of coping strategies, each on one card. Helping questions might be: What helps in stress situations? What are you doing for getting better? The results are collected without comment in the group. **Task 4** A short intervention including some exercises. **Task 5** Presentation of the "stress-bodies" in a plenary session, each group comments on their difficult points, all groups take turns.

STEP 2	**Task 6** Sticking the coping-cards on the symptoms of stress figures so that the stress disappears. By posing questions to the students, they are talking about coping strategies in plenary (are they for: short term, long term or effective, unhealthy). **Interim Reflection** √ Students' examples will be initially accepted and possibly augmented by questions from the teacher (e. g., how keywords as stress management are related to things like smoking, beating or eating chocolate). √ Teachers should pay attention to the integration of body reactions, thoughts, feelings and behaviour; all these components inter-relate, this can be deduced from the students' experiences.

STEP 3	**Theoretical Input** Stress affects the whole body, our thinking, acting and feeling. Stress puts the person in an activated state: √ Activation and perfusion of the brain √ Enlargement of the bronchi, respiratory acceleration √ Increased muscle tension, improved reflexes √ Elevated blood pressure, rapid heartbeat, sweating √ Energy supply, inhibition of digestive activity √ Reduction of sex hormones √ Short-term: increased pain tolerance (long term: non-reduced) √ Short-term: immune competence increases (long term: non-reduced) √ Cold hands and feet √ This stress reaction prepares the body to escape an imminent threat in the shortest time. Regenerative and reproductive functions of the body are suppressed. If this constructed energy does not get consumed, it results in a chronic condition of stress. Therefore, a balance of tension and relaxation is necessary. Physiological changes during rest and regeneration are called relaxation response. Relaxation responses are: √ Decrease in respiratory rate, constants of the individual respiratory cycles, lower oxygen consumption √ Decrease in muscle tension, decrease in reflex activity √ Vasodilatation, lowering of blood pressure √ Changes in brain electrical activity √ To feel good and calm

STEP 3	Stress management strategies can be divided into: Instrumental stress management (timetable, looking for support, ask for help, etc.) √ Cognitive stress management (realising small successes, to see difficulties as an opportunity, seeing the own strengths, etc) √ Palliative regenerative stress management short term: Television, jogging) and long term (relaxation exercises, maintain social networks, hobbies, sports, etc.) **Interim Reflection** √ Preparing and distributing a hand-out with the contents above is useful. More important is the experience of a relaxation response of the body, so the next step would be learning a relaxation technique. Not all students will achieve a body reaction. A calm atmosphere and regular practice are necessary to ensure success in learning to relax. √ This step can also be integrated in Step 2 at a suitable position.

STEP 4	**Task 1** Relaxation will be tested as a way of stress management. With systematic relaxation strategies the arousal level can be sustained. Progressive muscle relaxation was developed by Edmund Jacobsen in the U.S. as a relaxation exercise presented in the 1920s. Since that time the method has been converted and reduced, but endured based on the fundamental principle of systematic relaxation through tension and relaxation. So step by step, the different parts of the body have to be tensed successively about 5-10 seconds and afterwards relaxed, retrospectively. All parts of the body which are not mentioned should be relaxed. Before the actual exercise the students should "travel" in thoughts through their body. This prepares the relaxation state. Attention is given internally to one's own body: "Close your eyes and breathe deeply in and out. Listen to the room and its noise and let it be part of the relaxation. Let your thoughts move, as the clouds move over the sky. Let them flow, without wanting to hold on. Now turn your attention inwards, direct it to your feet. Feel how the feet fall apart. Feel your calves, your knees, your thighs. Feel Your bottom, as it lies firmly on the ground. Feel your back, and feel up to the shoulders, which are completely relaxed. Feel your arms and hands, feel them relaxed next to the body. Feel your neck and your head and try to relax your scalp. Feel how the eyes relax, as they sink deeper into the eye sockets. Feel the relaxed chin, let it fall very easily. You're quiet, very calm and relaxed."

STEP 4

The previously explained relaxation and tension of the individual parts of the body is followed.

1. Right hand and right arm: Keep the tense for 10 seconds, then relax and keep the relaxation for at least 30 seconds.
2. Left hand and left arm: Keep the tense for 10 seconds and then relax, enjoy the relaxation.
3. Face tense: Scrunch the eyes, wrinkle the nose and make a wide grin, hold it for 5-10 seconds and then relax and enjoy.
4. Tense the neck: Press the chin towards the sternum, hold it for 5-10 seconds, and then enjoy the relaxation.
5. Tense of the trunk: Press the shoulders up and backwards, keep the abdomen straight and keep on breathing quietly. Keep this position for 5-10 seconds and then relax and enjoy.
6. Tense the right leg and right foot: Pull the toes toward the face, push the knees trough and keep the thigh tense. Hold it for 5-10 seconds and then relax and enjoy.
7. Tense the left leg and left foot: Pull the toes toward the face, push the knees trough and keep the thigh tensioned. Hold it for 5-10 seconds and then relax and enjoy Finally, all students feel through their bodies again. They should feel calm and also (maybe) a nice gravity and heat. These are reactions of relaxation. The students enjoy the relaxation. (Target: physical relaxation, getting to know a technique which helps getting calm by using it.)

Task 2

Feedback: When all the students are "back" from relaxation they report about their experience during the exercise. If students like to relax a little further, they can do a massage to each other by using Hedgehog-Balls (using it on the back and the arms).

Task 3

The students use stickers for evaluation at the end again: "How do I feel after the relaxation?" Every student goes ahead and puts the sticker on a scale with the values "very good" to "very bad".

Interim Reflection

√ PMR can counteract tension, produce a feeling of physical and mental relaxation; it can significantly reduce headache that is activated by tension, chronic pain, sleep difficulties, nervousness and testiness. It can compensate daily stress and strengthen the immune system.

S **T** **E** **P** **4**	√ The students should be prepared before: the initial step is to learn what tension feels like. The teacher explains what exactly happens physiologically in the body and encourages questions and gives answers. √ The termination of the exercise is explained and performed once: arms firmly tense, then stretching, moving the head slightly back and forth, taking a deep breath and finally open the eyes. √ The teacher talks in a calm way during the exercise and pays attention to breaks and students' reactions. Disruptions such as denial, giggling, etc. are normal at the beginning. The teacher should keep eye contact and just continue in a calm way. √ Especially in adolescence students are not easy to get relaxed, even if they benefit from it. Patience, tolerance and practice are the magic words for successful guidance of relaxation. Also the students have to get used to these types of exercises.

Final Reflection

For the last evaluation the students use stickers again: "How do I feel after the relaxation?" Every student applies a sticker on a scale with the values "very good" to "very bad".

The goal of the unit is to talk about stress and its physical effects. This kind of exercise can be the first entry into relaxation technology. This kind of exercise will be sustainable and effective when it is getting embedded in the regular school day. This unit has already been performed with disadvantaged students successfully. It is good to help students picking up by their own experiences and help them to get some new.

5	Additional Information

References

√ Beyer, A. & Lohaus, A. (2006). *Stressbewältigung im Jugendalter. Ein Trainingsprogramm*. Göttingen: Hogrefe

√ Caspary, R. (Ed.) (2007). *Lernen und Gehirn. Der Weg zu einer neuen Pädagogik*. Freiburg, Basel, Wien: Herder.

√ Hampel, P. & Petermann, F. (2003). *Anti-Stress-Training für Kinder (AST)*. Weinheim, Basel, Berlin: Beltz.

√ Junge, J., Neumer, S., Manz, R. & Margraf, J. (2002). *Gesundheit und Optimismus GO. Trainingsprogramm für Jugendliche*. Weinheim, Basel, Berlin: Beltz.

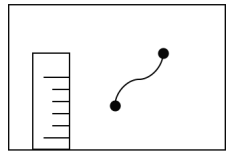
√ Kaltwasser, V. (2008). *Achtsamkeit in der Schule. Stille-Inseln im Unterricht: Entspannung und Konzentration*. Weinheim, Basel: Beltz.

- √ Kaluza, G. (2004). *Stressbewältigung. Trainingsmanual zur psychologischen Gesundheitsförderung*. Heidelberg: Springer.
- √ Lohaus, A. & Klein-Heßling, J. (2006). Stressbewältigung. In A. Lohaus, A., M. Jerusalem & J. Klein-Heßling (Eds.), *Gesundheitsförderung bei Kindern und Jugendlichen* (pp. 325-247). Göttingen: Hogrefe,
- √ Meichenbaum, D. (2003). *Intervention bei Stress. Anwendung und Wirkung des Stressimpfungstrainings*. Bern, Göttingen, Toronto, Seattle: Huber.
- √ Müller, E. (1995). *Auf der Silberlichtstraße des Mondes. Autogenes Training mit Märchen zum Entspannen und Träumen*. Frankfurt/M.: Fischer.
- √ Schaarschmidt, U. & Kieschke, U. (Eds.) (2007). *Gerüstet für den Schulalltag. Psychologische Unterstützungsangebote für Lehrerinnen und Lehrer*. Weinheim, Basel: Beltz.
- √ Vaitl, D. & Petermann, F. (2004). *Entspannungsverfahren. Das Praxishandbuch*. Weinheim, Basel: Beltz.

3.4 Body and Measurement Module

David Cañada & Marcela Gonzáles Gross

Food Groups



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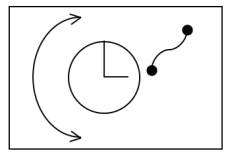

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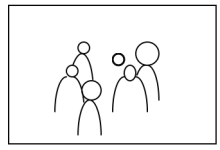

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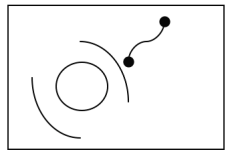
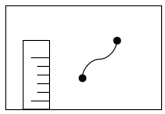
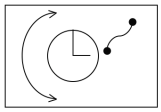
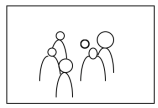
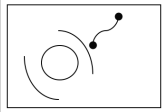


Body & Environment

1	Teaching Information

Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

Corresponding Subject(s)	1.	2.	3.	4.

2	Health Competencies

Physical Fitness

√ Students improve their aerobic endurance and agility through games.

Knowledge

√ Students learn about the different food groups.

√ Students get to know how to identify each food with the group to which it belongs.

Psycho-social Skills

√ Students learn to work in a team.

Attitudes

√ Students experience the appreciation of the relationship of good eating habits and health.

3	Conditions

Location/Facilities

√ Gym

Material List

√ 5 cards with the food groups
√ 25 cards with foods from different groups
√ 10 soft balls
√ 15 hoops of 5 colours
√ 8 mats

4	Content

STEP 1

Games are played to work with the different food groups.

Task 1

The teacher asks the students if all foods are the same, how are they similar, etc.? They then present the food groups all together and associate each one with a colour.

Task 2 The Basket of Food

√ Each student has a food card
√ All the students run around the pitch
√ The teacher will call out a number and the students from the same food group have to form groups together according to the number that the teacher indicated.

Variation: The teacher calls out two food groups, and the students from these two groups try to group together and the rest try to stop them from doing so.

S T E P 1	**Task 3 Mutiny of the Food Groups** All the students run around the pitch with their food card. The soft balls will have been placed beforehand around the ground The teacher will show a card or a hoop of a colour corresponding to a food group and the group indicated will have to pick up the balls as quickly as possible and try to throw them at the rest of the groups. The latter will run as fast as possible to the goalposts. If they reach the goal posts they cannot have balls thrown at them. **Task 4 Fast Delivery** The hoops with the colours of the different groups are placed on the ground (several hoops of each colour) and everyone runs around the hoops. The teacher shows a card with a food and the students have to step as quickly as possible into the hoop of the colour to which the food belongs. Those who are left outside will have some type of penalty (5 sit-ups). Variation: They can run in pairs (piggy back), run backwards, sideways, etc. **Task 5 Mimicking Food** The students form 2 or 3 large teams in pairs. One lies down on the floor and the other one sits near him. The teacher calls a food group and the students have to draw a food belonging to this group on the partner's back (three correct answers are one point).

	Final Reflection √ While the students sit in a circle the teacher starts a discussion about what they have learned.

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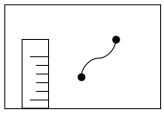
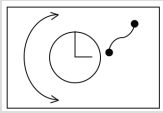
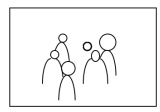
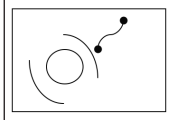
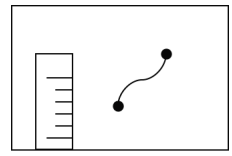
Sport Games and Fun with Vitamin C

1	Teaching Information

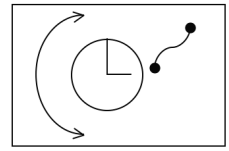
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

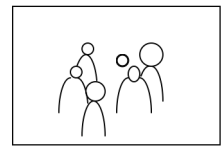
Corresponding Subject(s)	1.	2.	3.	4.



Body & Measurement



Body & Time



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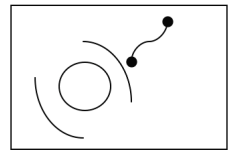


Body & Environment

2	Health Competencies

Physical Fitness

√ Students develop spatial orientation through passing, grasping and aiming.

√ Students develop hand-eye coordination.

Knowledge

√ Students get to know that vitamins are necessary for regulation of the body's proper functioning.

√ Students get to know the vitamin contents in different fruit and vegetables.

Psycho-social Skills

√ Students can choose food products with the necessary amount of vitamins for a daily diet.

√ Students can choose an effective tactic influencing the team's outcome.

Attitudes

√ Students can consciously choose food products in their daily diet.

√ Students can work in a team to attain a specified objective.

3	Conditions

Location/Facilities

√ Gym

Material List

√ Fruit and vegetable cards

√ Appendix 1 and 2

√ 2 boards

√ Coloured self-adhesive tape

√ A rubber ring, hoops, basketballs, volleyballs, tennis balls, medicine balls, sponge balls

4	Content

S T E P 1	**Task 1 Warm-up Game "Tic-tac-toe"** Students are divided into two groups, each marked with a different colour of sashes. Each team designates a 3-member section. The pitch consists of 25 squares and is marked on the floor with the adhesive tape. Two three-player teams from both groups are positioned on the pitch according to the figure on the left. At the teacher's signal, all players from one team take one step and occupy one empty square. Then the opposite team does the same. The team which first lines up three players in a single row wins.

STEP 2

Task 1 Throwing Game "Vitamin Intake"

Students stand in four lines; each line is a separate team. The players' aim is to score the number of points determined by the teacher (70 pts.) by throwing small foot bags into one of two marked circles. A foot bag landing within the inner circle gives a team 25 pts., within the outer circle – 20 pts. Each player on a team must throw a foot bag and tries to score. The team which scores closer to 70 points wins.

Task 2 Learning the Point System; Picking Fruit and Vegetables

The teacher explains to students that the number of points they have aimed to score corresponds to the recommended daily intake of vitamin C. The teacher describes the lesson plan: after each "Vitamin intake" game one player from the team picks a fruit and vegetable card from the board, depending on the place his/her team has just won (1st place – fruit or vegetable with 100mg of vitamin C; 2nd place – 75mg, 3rd place – 50mg and 4th place – 25mg) and pins it on his team's board. The aim of the game is to collect the largest number of fruit and vegetable cards to ensure the daily recommended intake of vitamin C to each player on the team.

Task 3 Running Game "Vitamins vs. Free Radicals"

Students are divided into two teams and stand facing each other behind the end lines of a volleyball court. On the court there are different balls scattered around (tennis balls, basketballs, medicine balls). The tennis balls and basketballs symbolize vitamins, medicine balls – free radicals, and the area out of bounds where the players stand – a human body requiring vitamins. A game is played for one minute. The players' aim is to carry as many "vitamins" to their own home area. A team scores one point for each "vitamin" safely "in the body." The teams can also take away points from their opponents by carrying out a medicine ball, e. g., a "free radical" and take it out of bounds to the opposing team's home area. The game stops after one minute at the teacher's signal. The final score is calculated in such a way that only those "vitamins" which are carried (not tossed) and placed out of bounds are counted. If a medicine ball is out of court but it has not been carried into the opposing team's home area, a point is subtracted from the team that picked out the "free radical,"

Task 4 Picking Fruit and Vegetables

One player from each team comes to the board with the fruit and vegetable cards grouped into five sets, depending on the contents of vitamin C (see Appendix 1), and picks a card, depending on the place his team has won (1st place – fruit and vegetables with 100mg of vitamin C contents; 2nd place – with 75mg) and pins it to his team's board.

STEP 2	**Task 5 Throwing Game "Hitting Free Radicals with Vitamins"** Two players from one team stand facing each other and roll a medicine ball or a basketball ("free radical") between them. The other players from the team remain at some distance from them and try to hit the "free radical" with tennis balls ("vitamins"). A successful hit scores one point for the team. After two trials, the other team starts the game. Whichever team scores more points wins. **Task 6 Picking Fruit and Vegetables** **Interim Reflection** √ Experiences, background information (questions and comments) √ Reflection of personal experiences, background information, consequences by asking the students specific questions: • What are your favourite fruit and vegetables with high content of vitamin C? • What role do the antioxidants play in the human body? • What are the free radicals?

STEP 3	**Task 1 Team Game "From Captain to Captain"** The students are divided into two teams; each team selects two captains who take their positions across the pitch. Each team has three balls. One of the captains starts the game trying to pass a ball to his counterpart across the field. The players inside the court are allowed to make three passes before the ball is thrown to the other captain. The opposing players try to intercept the ball inside the court. If they do, they can pass the ball to their own captain. Each successfully passed ball scores one point for the team. Whichever team scores more points wins. **Task 2 Picking Foodstuffs**

STEP 4	**Task 1 Final Score** The final score is calculated by checking which team has collected the number of points corresponding to the recommended daily intake of vitamin C for all members of the team altogether. **Task 2 "Vitamin Joker"** Each team picks a JOKER card (see Appendix) from the board starting with the team with the largest number of points. A JOKER card can be picked only once.

	Final Reflection **Discussion** Presentation of health benefits of fruit and vegetables from the vitamin C JOKER cards. Each student decides how he or she can supply his or her body with the required amount of vitamin C. Each student picks fruit and vegetables from the list. Students describe taste values of the chosen fruit and vegetables **Cool-down play: Body letters** Students form with their bodies letters of vitamins which are, in their opinion, the most significant in a healthy diet.

5	**Additional Information**

Appendix 1

Fruit and vegetable cards: vitamin C contents in fruit and vegetables (100 g):

up to 10 mg of vitamin C	up to 25 mg of vitamin C	up to 50 mg of vitamin C	up to 75 mg of vitamin C	up to 100 mg of vitamin C
beetroot	tomato	cabbage	red cabbage	Brussels sprouts
corn	string beans	green peas	spinach	green peppers
carrot	nectarine	redcurrant	cauliflower	

cucumber	gooseberry	orange	kohlrabi
lettuce	pineapple	grapefruit	kiwi
celery	whortleberry	lemon	strawberry
banana	blueberry	raspberry	
pear			
apple			
grapes			
apricot			
peach			
plum			

Appendix 2

JOKER cards

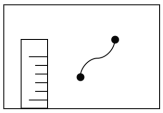
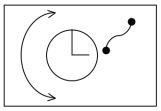
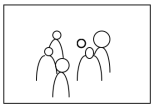
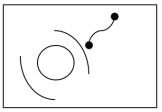
Over 150 mg of vitamin C (JOKER)
kale
red peppers
parsley
blackcurrant

Monika Ciekot, Adam Kantanista, Ida Laudanska-Krzeminska & Malgorzata Bronikowska

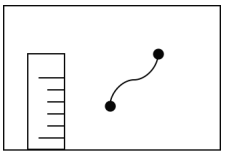
Body Weight

1	Teaching Information

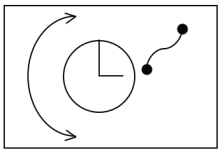
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

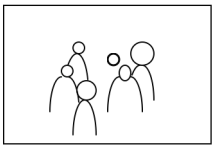
Corresponding Subject(s)	1.	2.	3.	4.



Body & Measurement



Body & Time



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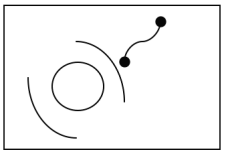


Body & Environment

2	Health Competencies

Physical Fitness

√ Students can develop different speeds of reaction to different stimuli.

√ Students develop coordination and spatial orientation.

Knowledge

√ Students get to know the reaction of their bodies to exercise of different intensity.

√ Students get to know the energy value of breakfast food products.

√ Students get to know what energy balance is understand the relationship between physical activity and maintaining proper body weight.

Psycho-social Skills

√ Students are able to calculate the amount of energy expended by the body during exercises of different intensity, and interpret the obtained results.

√ Students can assess the intensity of exercise by analysing heart rate measurements.

Attitudes

√ Students get involved in the process of balancing energy supply and expenditure.

√ Students develop the habit of regular participation in different forms of physical activity.

3	Conditions

Location/Facilities

√ Gym

Material List

√ Pictures of several breakfast and snack menus, supplied with information on energy value; pictures can be laminated

√ Work cards and pencils for each group of students

√ Heart rate and energy expenditure charts (laminated)

√ 12 rubber rings

√ 10 hoops

√ Ropes

√ Goals

√ 1 volleyball

4	Content

S T E P 1	**Task 1 Choosing the Breakfast Menu** Students are divided into four-person groups and given pictures of breakfast and snack menus. Each student chooses his or her favourite breakfast menu and puts their names and the menu number on the group's work card (work cards and pencils should be within easy reach). Students decide whether they can balance the selected menu with exercise during a single lesson and justify their decisions to the teacher.

STEP 1	**Task 2 Warm-up play "Ring Tag"** Students stand in a circle, half of them holding rings in their hands. One student is the tag in the middle of the circle. The students with rings try to call the attention of their counterparts without the rings in the circle, by waving or shouting to them. Then such pairs switch places trying to dodge the tag. If the tag catches one of the runners, the latter takes his or her place. **Task 3 First Heart Rate (HR) Measurement** At the teacher's signal students take their HR on the carotid artery for 15 seconds and put down the obtained measurements on the respective work cards. **Interim Reflection** Experiences, feedback

STEP 2	**Task 1 Equipment Preparation** Using the available materials (hoops, ropes and sashes) students construct two goals with the teacher's help. **Task 2 "Soccer Ring"** Two specially-prepared goals with hoops are placed at both ends of the playing field. The game is played by two teams which try to score points by throwing the rubber ring through one of the hoops in the opponent's goal: top hoop – 2 points, middle hoop – 1 point, bottom hoop – 3 points. The players are not allowed to run while holding the ring; they can only pass it to their teammates. **Task 3 Second HR Measurement** **Interim Reflection** √ Would you be willing to play this game in your free time? √ Is it an attractive activity to you? √ How and why has your heart rate changed during the exercise?

S T E P 3	**Task 1 "Polish Ring"** The game is played on a volleyball court. Play is started with a serve beyond the end line to the opponent's half. The serving player is changed every three points. The players can catch the ringo with one hand only and must not pass it from one hand to the other (loss of point), and throw it over to the opponent's half. A point is scored after the ring falls on the opponent's half. A team also scores a point for every error committed by the opposing team. The game is played until 15 points are scored, or to a specified time limit. More than one ring can be used. **Task 2 – HR Measurement**

S T E P 4	**Task 1 Calculating Energy Balance** Using the energy expenditure table students calculate their energy expenditure during the lesson and verify their initial decision about energy balancing of a selected breakfast menu. The teacher explains to the students how the HR measurements can be used for determination of energy expenditure. The teacher has a talk with the students and demonstrates potential (also limited) possibilities of balancing the consumption of particular foods by way of physical exercise.

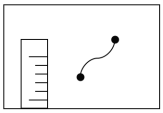
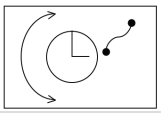
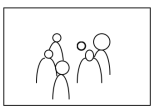
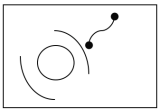
	Final Reflection **Task 1 Discussion** Each student tries to answer the question: "What is easier for me: choose a healthier meal or exercise longer to burn it?" **Task 2 "Idea Bank"** √ The teacher asks students to give an example of application of selected nutritional strategy in real life.

Konrad Kleiner & Elisabeth Lenz

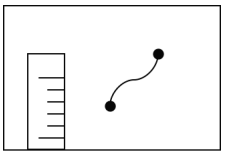
Core Posture

1	Teaching Information

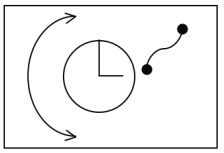
Type of Teaching Example		
Physical Education Class	Cross-Subject P.E. & corresponding subject(s)	Health Project P.E. & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	Body & Time	Body & Bodies	Body & Environment

Corresponding Subject(s)	1. Biology	2. Physics	3.	4.



Body & Measurement



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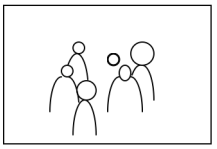
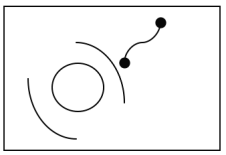


Body & Bodies



Body & Environment

2	Health Competencies

Knowledge

√ Students get to know how to recognise poor posture in classmates.

√ Students getting able to explain poor posture to a classmate.

√ Students get to know how to transfer the concept of "posture" into the daily life.

Body Experience

√ Students getting experienced in self-awareness.

Psycho-social Skills

√ Students discuss stress on the spine in different situations (e.g., during everyday school life) from a physical and health point of view.

Attitudes

√ Students recognise the link between one's posture and mood.

√ Students are modifying one's posture for better health and support the change through training.

3	Conditions

Location/Facilities

√ Gym

Material List

√ Images for demonstration

√ Model (material for the model)

4	Content

S T E P 1

Task 1 Introduction (Biology, Sport)

As an introduction and referring to the biology curriculum (evolution), the teacher points out that an essential step in the evolution of man was the transition to the upright posture. Using only the lower extremities for support and motion of the body freed the arms of these functions and allowed the development of advanced fine motor skills. The trunk raises above the lower extremities and becomes the carrier of the head and upper extremities. Due to gravitational forces this posture brings a higher mechanical burden on the spine, which, as the central axis of the upper body, has to keep it upright with the help of muscle and nerve systems. Furthermore, our back has to carry all the weights we lift. In the introductory units, selected topics are integrated into and treated in the physical education classes, making an important contribution to the sensitisation of the students towards the topics of "posture", "spine" and "muscular imbalances".

S T E P 1	Example topics: √ Conscious self-awareness of one's own posture and developing a feeling for the right posture. √ Learning about links between spine function, good posture and mood. √ Get a feeling for poor posture (muscular imbalances), identify them in classmates and develop and test a programme of functional stretching and strengthening exercises. **Task 2** Additionally, spinal stress in various situations (e.g., during a school day) is analysed from the physical and the health point of view. **Interim Reflection** √ Experiences, feedback

S T E P 2	**Task 1 Background Information** The structure of the spine, the significance of the torso's musculature and its stabilising function are explained trough illustrations. The spine presents a complex muscular pulley system, comparable with the pull cords on a ship's mast. Their finely tuned interplay allows the upright posture and flexibility of the upper body. The main stress factor is considered to be the compression of the spinal discs through weight and the muscular forces FB (abdominals) and FR (back muscles). It should be pointed out that mutual wedging of the vertebrae against one another puts the worst possible stress on the discs. Furthermore, the students are told that for a normal-weight person with good posture, the perpendicular of the body's centre of gravity passes within a few centimetres of the lumbar spinal disc's centre, towards the body's interior.

STEP 3

Task 1

Visualisation of various stresses on back musculature for different positions of the body's centre of gravity.

For the following, the position of the upper body's centre of gravity (including head and arms) is important. Unfortunately, there is no easy way to determine the position of this partial centre of gravity, especially not in class. The same is true of the distances between the lines of action of gravity and of the forces applied by the back muscles, and the pivot point (lower lumbar vertebrae).

One solution would be to give the students realistic values for lever lengths and masses for the stress estimates. The direction of the centre of gravity's movement induced by mass distribution and posture changes, however, is intuitively understandable. The effects of carrying heavy loads, obesity or wrong weight lifting techniques on the spine are experienced in practical exercises (physical education) and discussed and modelled (physics). The following experiment allows visualisation of the increasing stress that comes with an ever increasing stomach. *Figures 2* and *3* show a model of the upper human body.

Building instructions for the model: A human head and torso are drawn onto a board of plywood and sawn out. Then, a hole is drilled into the board to install a tripod articulation so that the torso can be tilted forward. The dummy is cut out of cardboard to fit the drawn shape and glued onto the board. On the other side of the board, a tube is installed, containing a rod that can slide in and out of it. This rod carries the movable belly, and according to the size of the belly (determined by moving the rod in the tube), weights are attached to simulate the burdening.

By means of this model, it can be demonstrated that in the case of a person of normal weight, barely any pull is needed to hold the upright posture (see *figure 3a*). In a real body in this position, the back muscles don't need to exert much force to keep the balance. If the model torso gets a big stomach, a force FM is needed to restore the upright posture. This force must be exerted permanently by the back muscles of an overweight person, and this represents a notable strain on the muscles and the spine. Shifting the centre of gravity backwards through leaning back reduces the strain, but leads to an anatomically unnatural posture.

STEP 3

Task 2 Calculating the Load on the Spine

As an application of the lever rule, the corresponding load can be calculated. For students of normal weight, the perpendicular of the torso's centre of gravity lies only a few cm in front of the centre of the lumbar disc. The torques caused respectively by gravity and the back muscles must compensate each other to maintain balance. If we suppose that the lever of the torso's weight is 3 cm, the lever of the back muscles 5 cm and the weight force of the torso FP = 400 N (m ≈ 40 kg), then 400 N · 3cm = FM · 5cm gives us 240 N as the force required from the back muscles. The force resulting from weight and muscle work acts directly on the spinal disc (resp. the articulation) and is responsible for the strain it must withstand. In this example, we have designated as FM the sum of all forces exerted by the muscles, knowing that this substitution is only an approximation or a simplified model because of the different lines and points of application of these forces. Also, we considered FM to be a vertical force, as the stronger muscles run parallel to the spine, which is essentially vertical.

Task 3

Load for large stomached person and person with bad posture: Once the class has completed this task, a further exercise would be to calculate the load for an overweight student or a sitting student leaning strongly forward.

Note: The corresponding modelling with the wooden torso would consist of adding an additional weight to the extended belly.

Task 4

The load on the spine in a sitting position can also be calculated.

Task 5

Load while lifting a weight: The students notice that a bent back and straight legs give the upper body/the lifted weight a bigger lever l than they would have with a straight back and bent legs. The compensating force exerted by the back muscles must be high in the first case, and consequently the load on the spine is also very high. With the aid of some simple calculations, the load on the spine while lifting a weight can be compared with the case of a person standing upright and the case of a person whose legs and upper body are at an angle of nearly 90°.

STEP 4	**Task 1** The usual illustration of stable equilibrium can be supplemented with the following examples of balance in humans. Intuitively, the students understand that the centre of gravity is about at the height of the navel inside the body when standing upright. For a body in the upright posture, the equilibrium is stable if the perpendicular of the centre of gravity lies inside the standing surface. The perpendicular touches the limit of the standing surface; there is an unstable equilibrium in which the slightest horizontal force can cause the body to topple over. The students can try this out by leaning forward, keeping their body rigid, until the perpendicular leaves the standing surface and the students fall down. When carrying heavy objects, the centre of gravity is moved to the opposite side, so that the centre of gravity of the combined masses (body + object) stays above the standing surface. The load on the spine is much higher in this case than it is with symmetric spreading of the load on both sides. The standing surface and thus the stability of the upright position can be increased either by spreading out one's feet or through the use of a technical device (e.g. a walking stick).

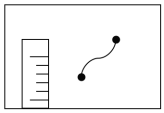
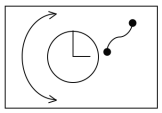
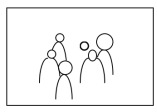
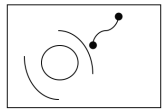
	Final Reflection √ Which poor posture did you notice on yourself and your classmates? √ Which exercises can you think of to compensate for them? √ What makes it difficult for you to do those exercises regularly? √ How can you support each other in this? √ Which formulae were used for the calculations? √ What's the result of the project?

David Cañada & Marcela Gonzáles Gross

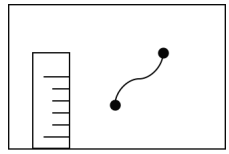
“Healthies” Come to School

1	Teaching Information

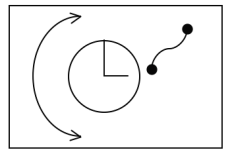
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

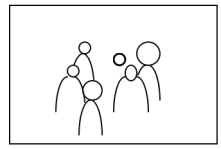
Corresponding Subject(s)	1. Mathematics	2.	3.	4.



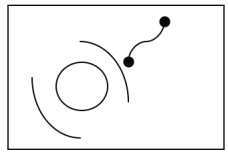
Body & Measurement



Body & Time



Body & Bodies



Body & Environment

2	Health Competencies

Psycho-social Skills

√ Students getting experienced in decision making

√ Students are trained to more self-responsibility

Attitudes

√ Students are faced to positive attitudes from healthy behaviours

√ Students performing acquisition of healthy habits

3	Conditions

Location/Facilities

√ Whole school

Material List

√ "Healthies" – fictional health currency

4	Content

STEP 1

Task 1

Using the implementation of a monetary system of "Healthies", the aim, as mentioned, is to promote the acquisition of healthy behaviours by the students in a novel, enjoyable and very attractive way for the first years of secondary education.

A 'healthy' is a positive reinforcement token which students are awarded in recognition for demonstrating healthy behaviours. At the end of each month the school's web page publishes the name of the student who has earned the most "Healthies" that month. The system of "Healthies" can be implemented in the Physical Education class but can also be extended to other subjects, to the recreation breaks, to the use of the cafeteria or to out of school activities, etc. How it works in the different subjects or facilities in the school is explained below:

Task 2 in PE Class

Each class or teaching unit clearly stipulates the number of "Healthies" which can be won with the different activities proposed by the teacher. Of course to win the "Healthies", it is not just ability and task completion which is rewarded but also the attitude of the student. As well as the tasks included in each class, helping to pick up the equipment, helping a companion, etc., are attitudes which are also rewarded with "Healthies". The mark is directly related to the "Healthies" obtained by each student.

The "Healthies" can be used to buy a series of benefits:

Renting PE material to take home like stilts, juggling balls, footballs, etc.

√ Going on out of school tips and outings which complement the P.E. classes, free.

√ Buying a PE class (among all the students) for a class of freely chosen games.

Buying the type of theoretical exam which is given, for example, that it be multiple choice, etc.

STEP 2	**Task 1 – Activities outside PE Class** In the cafeteria: choosing healthy products is rewarded with "Healthies". In the recreation breaks: Participating in the school championships which are organised by the PE Department wins a number of "Healthies". √ Bringing fruit to the recreation break, as well as a sandwich of course, is also awarded "Healthies". Out of class: √ Coming to school by bike √ Participating in out of school sports activities

STEP 3	**Task 1 "Healthies" in other Subjects** "Healthies" aim at rewarding healthy behaviours. In principle, it would be complicated to establish the system in subjects which at first sight do not deal with these contents, but it can be done on certain occasions when different subjects deal with the topic of health at a given moment, like for example in biology, physics and chemistry, etc. We believe that it is the teachers of the subjects themselves who should decide if it is possible to participate in the project.

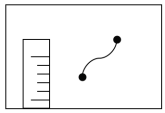
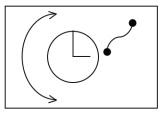
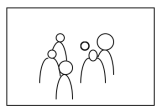
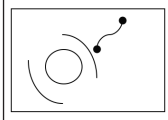
	Final Reflection √ For it to work properly in the classroom it is necessary for the teachers to prepare it systematically beforehand, so that it is perfectly clear at the beginning of the year what the "Healthies" are worth and the different activities which win "Healthies" as well as the prizes that can be obtained.

Dorit Simon

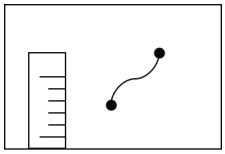
Energy Consumption and Intake

1	Teaching Information

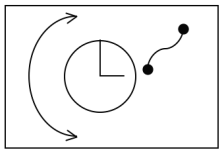
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

Corresponding Subject(s)	1. Biology	2. Mathematics	3.	4.



Body & Measurement



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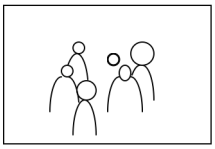

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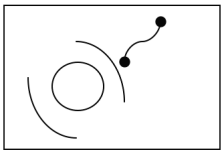


Body & Environment

2	Health Competencies

Physical Fitness

√ Students are trained in endurance
√ Students are trained Hand- and Eye- Coordination
√ Students are trained in flexibility

Knowledge

√ Students receiving knowledge about healthy food
√ Students getting introduced to the use of the Food Pyramid
√ Students receiving knowledge of nutritional guidelines and charts
√ Students get to know different food categories

√ Students receiving knowledge about food intake and energy consumption
√ Students getting information about diets
√ Students get to know potential health risks: unhealthy food and lack of exercise
√ Students receiving knowledge about an healthy and active life style

Body Experience

√ Students receive experience of physical fitness
√ Students get experiences in different eating habits
√ Students get experiences and contact with different peer-groups
√ Students receive experiences of cooperation and team spirit

Psycho-social Skills

√ Students performing teamwork and group discussions
√ Students learn to give proper feed back
√ Students learn how to resist to temptations

Attitudes

√ Students are given intentions to change the life style: healthy food and more exercise
√ Students think about eating habits
√ Students are getting more open for new experiences and new lifestyle
√ Students are faced critical considerations of commercial food information

3	Conditions

Location/Facilities

√ Classroom
√ Gym
√ Track and Field

Material List

√ Fitness and work out equipment
√ Fruits and vegetables
√ Beamer
√ Work-sheets

4	Content
S T E P 1	**Mutual Breakfast** Every student contributes something to a healthy breakfast. With the help of the table arrangement all students create relaxed atmosphere in a way that supports communication. **Task 1** The teacher presents the food pyramid with an overhead projector and the students check the food they brought for the "state: healthy". **Task 2** All students and teachers have breakfast and discuss expectations for the day. **Task 3** A ball is thrown with the naming of an element of the breakfast (butter) and the catchers call the main group (fat).

STEP 2	**Health and Nutrition-orientated Games** **Task 1** Which group has the healthiest breakfast? Buckets or baskets marked in colours form a 6-stage pyramid. Every breakfast unit (drink, bread, fruit / vegetables, butter, etc.) is represented by a ball corresponding to the colours of the different buckets. The students throw the different balls (representing the different units of food) into the right basket. Afterwards the groups check the baskets and present their breakfast. **Task 2 Healthiest Breakfast Run** Lines on the ground show the food pyramid. All groups start at the base line. The students are supposed to run to the "different units" (balls) of their breakfast, pick them up one after another and run back to the base line. **Task 3 Calorie-Fight** The students read the material about nutritional values of the different breakfast types. Five minutes of activity at exercise/fitness equipment (with calorie output) is provided in order to clarify the expenditure and calorie consumption Then every child has to guess how many calories it spent in the 5 min. **Interim Reflection** √ Short discussion about the different breakfast types and the relation between energy intake and consumption.

STEP 3	**Vitamin Meeting** **Task 1** Read specialist texts about vitamins, daily requirement (Teacher's lecture). **Task 2** Students draw a card which assigns them a fruit and which they must not disclose to the others

STEP 3	**Task 3 Dodge Ball** As soon as one child is hit, the thrower has to taste a piece of the fruit that represents the child (small pieces of the fruits are ready in cups) and has to name it correctly. Only then the hit child is eliminated. Variations: the whole group may taste in order to guess the fruit.

STEP 4	**Task 1** Read specialist texts about physiology and fluid requirement, the consequences of fluid deficiencies, tips to cover the needs, read advice about sugary drinks and the consequences. (Note: Teacher's lecture) **Task 2** Investigation of the ingredients of popular drinks (empty packages are at hand). For illustration, weigh the particular sugar content per glass (200ml) with a kitchen scales and put beside the glass. **Task 3** Every child receives one package. All students try to build a row according to the rank order of sugar content (this can be timed). The same can be tried with snacks, sweets etc.

	Final Reflection All students come together again. The day is recapitulated. What was most interesting, what was surprising, what was boring? √ Was there anything new? Are there new wishes? How can the experiences be applied in the daily routine and what are obstacles for that? A feedback barometer (for example) is set up visibly for everyone.

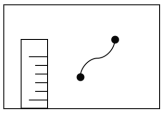
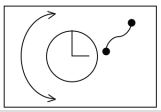
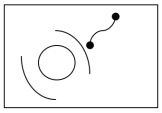
3.5 Body and Bodies Module

Konrad Kleiner & Elisabeth Lenz

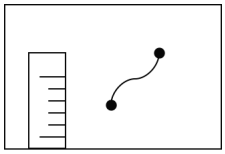
How to Help

1	Teaching Information

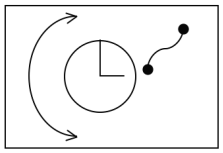
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

Corresponding Subject(s)	1.	2.	3.	4.



Body & Measurement



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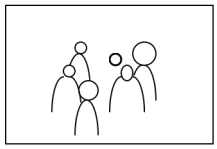
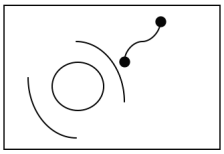


Body & Bodies



Body & Environment

2	Health Competencies

Knowledge

√ Students get to know immediate life-saving measures and getting able to apply them

√ Students understand the emergency medical system

√ Students recognise the necessity for First Aid

Body Experience

√ Students getting experienced in one's own First Aid abilities

Psycho-social Skills

√ Students getting able to help others without reluctance

Attitudes

√ Students getting sure what to do in case of an emergency?

3	Conditions

Location/Facilities

√ Gym

Material List

√ Coloured ribbons for identification, crash mats, foam block/soft ball/plush animal/etc.
√ Flip chart
√ Motion stories
√ Cards with emergency symbols and poster

4	Content

S T E P 1

Ambulance Game

Task 1

Set-up: One or more wrong way drivers are designated among the students. The others are (motor) cyclists or paramedics.

Task 2

Development: This game is intended to prepare the students for discussion about injuries and safety. A wrong way driver hits all the cyclists and motorcyclists, i.e. strikes them. As a consequence, the gym is strewn with casualties shouting for help. Players that have not been hit yet form a group of four and drag a casualty to the hospital (a crash mat in the centre of the gym) together. While the players carry another player or come to their help, e.g., hold their arm or leg, they cannot be hit. At the hospital, the person injured is healed immediately and can return to the game.

STEP 1	Variation: As an alternative, a thrown soft ball, foam block, plush animal etc. can be used to hit the (motor) cyclists. Explaining, showing and learning (or repetition) of the recovery position can be used to "heal" players. **Interim Reflection** √ How to rescue casualties the right way? √ How to behave at the accident scene? √ What to do with unconscious persons? → recovery position

STEP 2	**First Aid** **Task 1** Set-up: The purpose is to raise the students' awareness of the subject. The students gather at the centre of the gym to talk about the topics "immediate life-saving measures" and the emergency medical system. The final results are visualised on a flip chart. **Task 2** Questions √ What do you already know about First Aid? √ When do we have to provide First Aid? √ Who has to provide First Aid? √ How can we provide First Aid? **Task 3** Sensitisation: To emphasise the importance of important aspects like "shock management", the following exercise can be acted out: a volunteer lies down at the centre. The others stand around, look down and express their horror of the situation, but no one helps. How does the person injured at the centre feel? The opposite situation can also be simulated. **Interim Reflection** √ Everyone can and should provide First Aid. Why? √ Which situations can arise requiring us to provide First Aid? √ Which situations can arise in sport requiring First Aid?

STEP 3	**Accidents in Sport** **Task 1** Set-up: The students are split into small groups and are handed out case descriptions of sport accidents. Each team then has to enact the accident as well as First Aid measures. **Task 2** Enactment: The teams enact their stories, and their First Aid measures are discussed. **Interim Reflection** √ Experiences, feedback

STEP 4	**Immediate Measures – Medical Response** **Task 1** Set-up: This final relay run allows a repetition of the important elements composing the immediate life-saving measures and the emergency medical response system. The students are split into small groups. **Task 2** The run: The students run to the "card station". There, they take one of the cards lying face down and put it at the right place on the emergency response/immediate measures poster (which is lying on the floor). Which team gets the right answer?

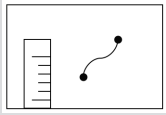
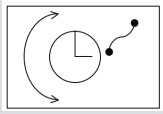
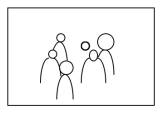
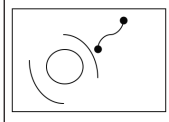
	Final Reflection √ How was it to help an accident person injured? √ Did you feel confident? √ Would you feel confident to help others? √ Would you like to know more about this topic? The questions and answers should be made visible. One possibility would be for the students to give the answers by sitting down or standing up.

Konrad Kleiner & Elisabeth Lenz

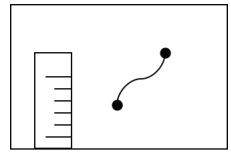
Moving in a "Different Body"

1	Teaching Information

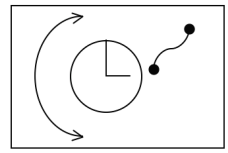
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

Corresponding Subject(s)	1.	2.	3.	4.



Body & Measurement



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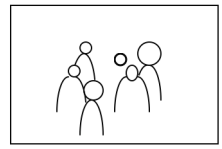

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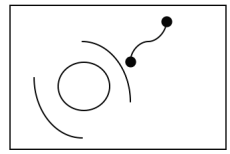


Body & Environment

2	Health Competencies

Knowledge

- ✓ Students understand that they as well as others change in different ways.
- ✓ Students understand the causes of changes related to the body (shape, weight, functions etc.) and possible prevention of unwelcome changes.
- ✓ Students understanding the effects of the changes of the body for daily life.

Body Experience

- ✓ Students explore the movement in an altered body.

Psycho-social Skills

√ Students getting opened for changes.
√ Students develop empathy for the difficulties that others might experience.
√ Students valuing their own corporality as it are now.

3	Conditions

Location/Facilities

√ Gym

Material List

√ At least one scarf for each student
√ Padding
√ Extra clothes
√ Weights
√ Sticky-tapes
√ Earplugs
√ "Binoculars" (e.g., made from toilet roll centre),
√ Surgical collar

4	Content

STEP 1

Task 1

Brainstorming: Students are asked to say in which ways human beings can change.

Task 2

Changing one's body, by size, weight or function ("becoming" heavier, wider, taller, with modified senses etc.). Students may pick a piece of paper describing the specific condition while using the prepared material, or choose it on their own and prepare for it at home. These different forms and capacities need to be applied in relation to the maturity of the group. It is possible to modify by:

– Changing the volume of the body – putting padding under their clothes or wearing extra clothes
– Changing the weight of the body – putting weights on limbs to feel heavier
– Changing sight – blindfolding one eye, or narrowing one's vision (using "binoculars")
– Not speaking during the lesson
– Not being able to hear during the lesson – putting earplugs in their ears
– Not being able to move one's arm – tying it to the body
– Not being able to move one's neck – wearing a surgical collar

STEP 1	**Task 3** Being in a modified form or with altered sensory perception, students do common and simple exercises/games in a Physical Education lesson. Recommended activities: obstacle course, a simple game, etc. **Interim Reflection** √ Students say how they felt during the lesson. √ Students will address the problems they encountered during their exercising and try to find solutions for them. √ Students speak about possible causes of the changes they experienced, suggest possible prevention, and then they present possible effects of their change for daily life.

STEP 2	**Task 1** Students do further common Physical Education exercises or perform the same exercises as in Step 1, now being encouraged to concentrate more on co-operation and helping each other during the activities, to try to understand what the others might need in their changed situations and find solutions for them. **Interim Reflection** √ Students say how they felt when helping or being helped and describe difficulties they encountered.

	Final Reflection At the end of the lesson students discuss their experiences and feelings, and say what they have especially noticed. They will be encouraged to become aware of the difficulties that obese, blind, short-sighted or handicapped people encounter when moving, and to develop respect for them. Students discuss these difficulties in pairs, so that they learn to listen to others and learn to communicate in dealing with these kinds of difficulties. To facilitate the discussion, they may begin by finishing sentences related to the content of the lesson: – I realised that people with ... – I was surprised that ... – It was easy for me ... – It was hard for me ... – Other comments: ...

	After discussion in pairs, each listener in turn reports to all the others what his/her partner experienced, to promote listening skills and empathy.

5	**Additional Information**

References

√ Gazda, G. M. & Evans, T. D. (1990). Empathy as a Skill. In R. C. MacKay, J. R. Hughes & E. J. Carver (Eds.) *Empathy in the Helping Relationships* (pp. 65-77). New York: Springer.

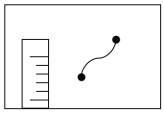
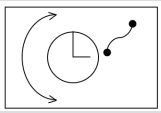
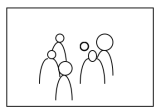
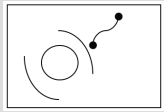
It is recommended that teachers read some introductory literature on empathy in their own language.

Malgorzata Bronikowska, Adam Kantanista,
Monika Ciekot & Ida Laudanska-Krzeminska

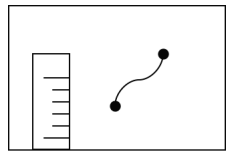
Team Sports

1	Teaching Information

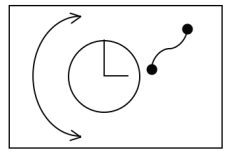
Type of Teaching Example		
Physical Education Class	**Cross-Subject P.E. & corresponding subject(s)**	**Health Project P.E. & corresponding subject(s)**

Corresponding Module			
			
Body & Measurement	**Body & Time**	**Body & Bodies**	**Body & Environment**

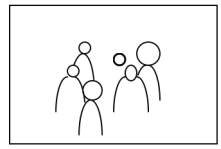
Corresponding Subject(s)	1.	2.	3.	4.



Body & Measurement



Body & Time



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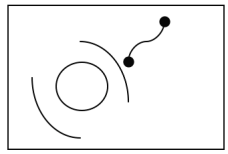


Body & Environment

2	Health Competencies

Physical Fitness

- √ Students develop that special fitness is necessary to take part in sport teams.
- √ Students develop coordination (combining music and movement).
- √ Students are enabled to use the learnt technical elements of individual team sports.

Knowledge

- √ Students get to know how to modify a sport game in everyday life.
- √ Students are faced to alternative warm-up and cool-down exercise.

Psycho-social Skills

√ Students getting able to modify the game in consideration of the number of players, available sport equipment or sports venue.

Attitudes

√ Students develop the habit of participating in different forms of physical activity.

√ Students getting able to adjust team games to their specific needs.

√ Students make sure that proper warm-up and cool-down are done constantly

3	Conditions

Location/Facilities

√ Gym

Material List

√ Gymnastic sticks, large fit balls, ring, goals, hula hoops, volleyball, handball, marker cones

4	Content

STEP 1

Task 1

Selection of the most popular team sports – students exchange their opinions.

Interim Reflection

√ Question: What are the most popular team sports in the world?

STEP 2	**Task 1 Aerobics with Gymnastic Sticks** (1) Walk (2) Step touch x 8, the stick held in both hands, raise and lower the stick at shoulder's height (3) V-step from the right foot x 4, arms bent at the elbow, the stick at shoulder's height, the stick is flung upwards to the right (on one) and upwards to the left (on two) (4) Step (3) from the left foot x 4 (5) Step out x 8, elbows close to the body, bending forearms (6) Lunges X 8, arms are flung forwards (7) Grapevine x 4, arms swing in circles (8) Heel-back x 8, passing the stick from hand to hand overhead **Interim Reflection** √ In the second part of the lesson the students propose new exercises. Question: What other exercises can you propose? Who can show us a new exercise?

STEP 3	**Task 1** Number of students: 2 teams of 4 to 8 players each (depending on the size of the pitch) Equipment: Gymnastic sticks (one for each student), 2 goals (from 1x1 to 2x3 m), markers for two teams The game is similar to floor ball, however a rubber ring is used instead of the puck. The ring can be shot or passed with a stick. A point is scored when the ring is shot into the goal. Players are not allowed to raise their stick above the knees. **Task 2 Hula Hoop Ball** Number of students: Two teams of 4 to 8 players each (depending on the size of the pitch) Equipment: 12 hula hoops, 1 basketball (or any other ball) 1 – 6 hula hoops are placed outside the opposite end lines of the pitch. In the middle of each hoop there is a sheet of paper with numbers written on it (from 1 to 6) signifying the number of points. The game is played according to basketball rules. Points are scored by dunking the ball into one of the hoops. The team with the higher number of points wins.

STEP 3	**Task 3 Handball – Cricket** Number of students: 2 teams of 4 to 8 players each (depending on the size of the pitch) Equipment: 8 marker cones (above 1m high), handball 4 stakes are placed 30-40cm apart on the end lines in both goal areas. The game is played according to handball rules. Players try to knock the stakes over with the handball. The team which knocks over the entire opponent's stakes first wins. **Task 4 Running Volleyball** Number of students: 2 teams of 3 to 8 players each (depending on the size of the pitch) Equipment: Volleyball Teams A and B stand in single file on both sides of the net behind the end lines. The first player from Team A serves the ball and runs onto the pitch. At the same time the first player from Team B also enters the pitch, returns the ball to Team A's half and runs to the end of his team's file. This is repeated by the other players from both teams. Points are scored as in indoor volleyball. **Interim Reflection** √ Are modified team games easier to play outside school? √ In what circumstances can a modified team sport be practiced?

STEP 2	**Task 1** (1) Sit on the ball, raise one arm and place the other arm on the hip; bend the torso to the left or to the right; stretch your body full-length. (2) The ball under the lower belly; the body lies on the ball; raise both legs flexing the buttock muscles, return to the initial position, relax muscles. (3) The ball under the lower belly; the body lies on the ball; bend the arms, elbows out, carefully bend the lumbar spine. (4) Lie on the back on the floor, the feet rest on the ball, legs straight at the knees, move the hips up and down. (5) Lie on the back on the floor, the feet rest on the ball, legs bent at the knees, move the hips up and down.

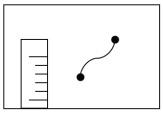
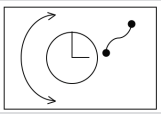
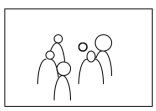
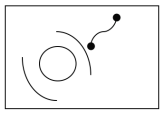
	Final Reflection √ Reflection of individual experiences, background information, feedback and evaluation (questions and comments) √ Comment: We have presented the use and adjustment of well-known team sports to explore different types of physical activity. Planning the use of modified team sports outside school, adjusting the rules of games according to one's own needs (number of players, available equipment, playing area) is required in life. √ Question: Which of the games can be played with your friends? Would you introduce any other changes to the rules of these games?

Carmen Cabrera Rivas & Ralf Erdmann

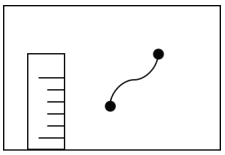
Spare Time Physical Activities

1	Teaching Information

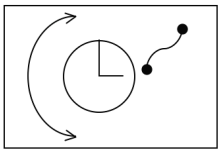
Type of Teaching Example		
Physical Education Class	Cross-Subject P.E. & corresponding subject(s)	Health Project P.E. & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	Body & Time	Body & Bodies	Body & Environment

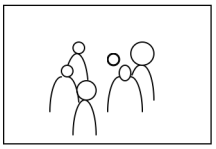
Corresponding Subject(s)	1. English Language	2.	3.	4.



Body & Measurement



Body & Time



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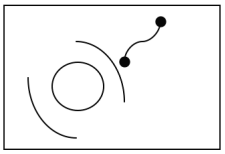


Body & Environment

2	Health Competencies

Knowledge

- √ Students get to know how to use an subject-specific important vocabulary in a foreign language.
- √ Students reflect how they spend their time during a whole week.
- √ Students reflect on which activities are challenging either the mind or the body.

Body Experience

- √ Students are trained in audio-visual perception.
- √ Students getting introduced to the body language.

Psycho-social Skills

√ Students exercise to explain in a foreign language the results of the own reflexions.
√ Students communicate and express ideas in a convincing way to the classmates.
√ Students getting the ability to present oral and with the body the results of "the survey".
√ Students getting the ability to answer spontaneous questions in a foreign language.

3	Conditions

Location/Facilities

√ Classroom

Material List

√ Pictures
√ Overhead projector

4	Content

STEP 1	
	Task 1
	Explanation of the vocabulary needed for the description of various leisure activities.
	Task 2
	"Brainstorming" on: – Mental vs. physical activities and its different effects – Different effects on the feelings accompanying routines repeatedly activities vs. having distinct varying activities. – Different forms of tiredness

STEP 2	
	Task 1
	In small groups (2-3) discussion/exchange impressions and experiences about own activities in the spare time, hobbies etc.
	Task 2
	Conversation in English about preferred activities after school within the whole group.

S T E P 3	**Task 1** Each student has to present a speech on "How do I spend a week?" The cues for the speech were: "How many hours a week do I..." – Watch TV? – Physical activities at school? – Sports or dance in a team? – Housework? – Homework? – Play computer games? – Spare time physical activities? – Other kind of hobbies? **Task 2** Criteria for the presentation were: (1) The student has to speak clearly, slowly and articulately. If it's possible use a diagram, pictures etc. (2) The "audience" has to listen attentively and at the end make comments or questions like: – Which activity do you prefer? Why? – Which activity can you consider as a spare time activity? – Which of the activities is relaxing to you? – What do you like to change? Why? – What do you like to keep further on? Why?

S T E P 4	**Task 1** Presentation of the prepared lectures to the classmates. **Task 2** After each lecture, the audience was encouraged to ask questions and/or give comments, using the given criteria as orientation **Task 3** Discussion, appreciation

	Final Reflection √ Perception and awareness of the own body within the environment √ Forms of activities and reflection upon its effects

5	Additional Information

References

Becker, P. (2006). *Gesundheit durch Bedürfnisbefriedigung*. Göttingen: Hogrefe.

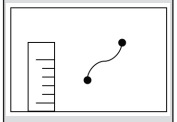
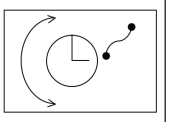
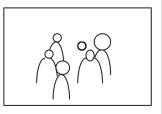
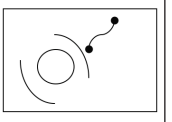
Fuchs, R., Göhner, W. & Seelig, H. (Eds.) (2007). *Aufbau eines körperlich-aktiven Lebensstils*. Göttingen: Hogrefe.

Irena Parry Martínkova

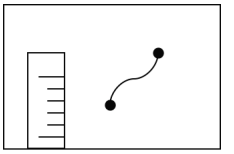
Posture and Emotions

1	Teaching Information

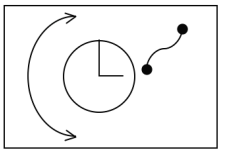
Type of Teaching Example		
Physical Education Class	Cross-Subject P.E. & corresponding subject(s)	Health Project P.E. & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	Body & Time	Body & Bodies	Body & Environment

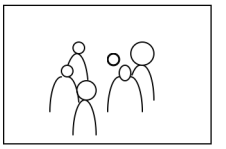
Corresponding Subject(s)	1. Biology	2.	3.	4.



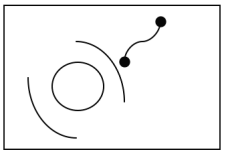
Body & Measurement



Body & Time



Body & Bodies



Body & Environment

2	Health Competencies

Knowledge

√ Students learn about the impact of emotions on us–how they affect our body and posture.

Body Experience

√ Students feel different emotions in our body.

√ Students recognise what happens in our body when feeling different emotions and becoming able to understand the effect emotions have upon us.

√ Students experience how posture and emotions are interrelated.

Psycho-social Skills

√ Students become aware of the effect emotions can have on us and others.
√ Students learning to recognize and interpret the emotions of others.
√ Students empathise with the manifestation of emotions of others.

3	Conditions

Location/Facilities

√ Gym, if possible that is pleasant (e.g. carpeted), e.g. one that serves for relaxation purposes

Material List

√ Chairs

4	Content

S T E P 1	**Introduction to the Topic of Emotions.** **Task 1** Different emotions will be listed by students, and common situations where they arise will be discussed (e.g., emotions in relations to others – from unsatisfactory relationships; in relation to poor environment – from too much noise; etc.).

STEP 1	**Task 2** Students will be asked to imagine some of the listed emotions and try to imagine it arising in themselves so that they invoke it (e.g., they imagine some fearful – joyful – sad – situation or a situation that makes them angry). During this, they try to notice how the feeling of this emotion presents itself in them – whether they feel some sensations in themselves connected with it, what they feel, where etc. Students are told to be aware of their "inside" – especially whole body movements, tensions, changing expressions, etc. **Interim Reflection** √ If it becomes difficult (if students feel uncomfortable, or act unfair), the exercises can be done in a circle, where students sit with their backs to each other so that they do not influence each other (laugh at each other etc.). √ After the exercise students discuss what they noticed.

STEP 2	**The Effect of Posture on Emotions** Students try different body positions and try to feel what emotions these body positions bring. **Task 1** Standing straight, looking straight ahead, being open to the world, smiling. **Task 2** Being hunchbacked, looking to the ground, being closed in on oneself, frowning. **Task 3** Students recall some stressful situations (e.g., when they are examined, when they speak in public) and think how the body position could change them (e.g., deeper breathing, standing straight, relaxing muscular tension). **Interim Reflection** The first two tasks can be done in a circle, where students sit with their backs to each other so that they do not disturb each other (laugh at each other etc.). √ After the exercise students discuss what they noticed.

S T E P 3	**Raising Awareness of Emotions in Human Relations.** **Task 1** In pairs, one student acts an emotion and the other one interprets it–i.e. says what emotion was acted, how he or she thinks that the other one was feeling or thinking, how the emotion could affect his or her body. (E.g. being angry – behind which may be tension and frustration from some disappointment.) Then students swap roles. It is suitable to act various emotions from those listed in Step 1. **Interim Reflection** √ Feedback on what students learnt.

	Final Reflection If students are unable to feel anything in this artificial situation, they may get some homework to find out during a real daily life situation and describe it in the next lesson or write it down. Students can be advised to observe their emotions in real daily life situations – to watch them arise and feel their effects. Advice to students: If the students frequently experience strong emotions in daily life (whether they ventilate them or suppress them), it is worthwhile to work more in this topic – either with the teacher or on their own – as they might see strong emotions having a powerful effect and possibly also harmful effect on them and/or others.

5	**Additional Information**

References

√ Power, M. & Dalgleish, T. (2008). *Cognition and Emotion*. Hove: Psychology Press.

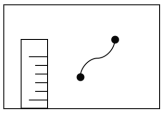
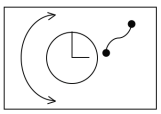
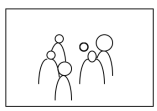
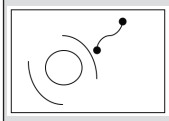
√ Gazda, G. M. & Evans, T. D. (1990) Empathy as a Skill. In R. C. MacKay, J. R. Hughes & E. J. Carver (Eds.) *Empathy in the Helping Relationships* (pp. 65-77). New York: Springer.

Carmen Cabrera Rivas & Ralf Erdmann

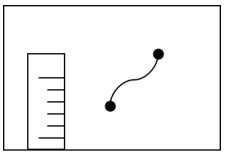
A Movie about Health

1	Teaching Information

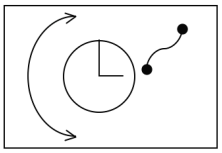
Type of Teaching Example		
Physical Education Class	Cross-Subject P.E. & corresponding subject(s)	Health Project P.E. & corresponding subject(s)

Corresponding Module			
			
Body & Measurement	Body & Time	Body & Bodies	Body & Environment

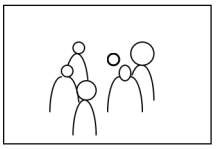
Corresponding Subject(s)	1. English Language	2.	3.	4.



Body & Measurement



Body & Time



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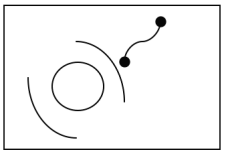

Body & Environment

2	Health Competencies

Knowledge

√ Students reflect on conflicts between different ethnicities and gender.

√ Students use available resources in a constructive way.

√ Students develop a deeper understanding of possible conflicts between different cultures.

Body Experience

√ Students feel awareness of different parts of the body and its coordination.

√ Students ameliorate of the ability to express ideas with body language.

Psycho-social Skills

√ Students learn to express oneself with the body and orally.

√ Students learn to exchange with classmates on personal important matters.

Attitudes

Students learn to work in depth on already developed ideas.

3	Conditions

Location/Facilities

√ Class room/ gymnastics hall

4	Content

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Task 1

Repeat the important aspects of health and health education of the movie watched during the last English lesson.

Task 2

In small groups (3-4), the students talk about the scenes which interested them.

Task 3

The groups go in separate rooms. They have 12-15min to prepare one scene of their choice. Each group has to present its result. Criteria are:

Is the message understandable?

√ Are different forms of expression used?

√ Are requisites applied adequately to support the idea?

√ Does each student play a part in the scene?

STEP 2	**Task 1** As physical warming up, some joint exercises were given experimenting with techniques of movement, which can be applied in the scene. **Task 2** Each group works separately (ca. 20 min) on its scene. The teacher goes around helping with ideas or corrections. **Task 3** The students work on the sequence of the scene, trying to improve the precision of movements and its expressiveness.

STEP 3	**Task 1** The students (with the help of the teacher) develop ideas how to accentuate the scene with some effects like sounds, music, words, lights or some accessories. **Task 2** Present the results to the classmates. Eventually, plan an additional presentation for a larger audience another day.

	Final Reflection Discussion and comments about the scenes.

5	Additional Information

The British film "Bend it like Beckham" is an adequate inspiration to reflect upon various types of differences such as: gender and sports, ethnicities, generation conflicts etc.

References

√ Giess-Stüber, P. & Grimminger, E. (2008). Reflexive interculturality as a development objective for schools and school sports. In P. Giess-Stüber & D. Blecking (Eds.). *Sport–Integration–Europe. Widening horizons in intercultural education* (pp. 297-303). Baltmannsweiler: Schneider.

√ Grimminger, E. (2009). *Interkulturelle Kompetenz im Schulsport*. Baltmannsweiler: Schneider.